PyroGenesis Canada Inc.

Consolidated Financial Statements December 31, 2022 and 2021

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Management's Responsibility

Management is responsible for the preparation and presentation of the accompanying consolidated financial statements, including responsibility for significant accounting judgments and estimates in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board. This responsibility includes selecting appropriate accounting principles and methods, and making decisions affecting the measurement of transactions in which objective judgment is required.

The Board of Directors and Audit Committee are composed primarily of Directors who are neither management nor employees of the Company. The Board of Directors is responsible for overseeing management in the performance of its financial reporting responsibilities, and for approving the financial information included in the annual report. The Board fulfills these responsibilities by reviewing the financial information prepared by management and discussing relevant matters with management and the external auditor. The Audit Committee has the responsibility of meeting with management and the external auditors to discuss the internal controls over the financial reporting process, auditing matters and financial reporting issues. The Audit Committee is also responsible for recommending the appointment of the Company's external auditor.

Raymond Chabot Grant Thornton LLP, an Independent Registered Public Accounting Firm, is appointed by the shareholders to audit the consolidated financial statements and report directly to them; their report follows. The external auditor has full and free access to, and meets periodically and separately with, both the Audit Committee and management to discuss their audit findings.

March 30, 2023

[Signed by P. Peter Pascali]

P. Peter Pascali, Chief Executive Officer

[Signed by Andre Mainella]

Andre Mainella, Chief Financial Officer



Raymond Chabot Grant Thornton LLP Suite 2000 National Bank Tower 600 De La Gauchetière Street West Montréal, Quebec H3B 4L8 T 514-878-2691

Report of Independent Registered Public Accounting Firm

To the Shareholders and Directors of PyroGenesis Canada Inc.

Opinion on the consolidated financial statements

We have audited the accompanying consolidated statements of financial position of PyroGenesis Canada Inc. (the "Company") as of December 31, 2022 and 2021, the related consolidated statements of comprehensive loss, changes in shareholders' equity and cash flows for the years then ended, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for the years then ended in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

Going concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 2 to the consolidated financial statements, the Company has incurred operating losses and negative cash flows from operations and, as a result, has an accumulated deficit as of December 31, 2022. These conditions, along with other matters as set forth in Note 2, indicate the existence of a material uncertainty that may cast significant doubt about the Company's ability to continue operating as a going concern. Management's plans in regard to these matters are also described in Note 2. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

We have served as the Company's auditor since 2021.

Raymond Sholot Grant Thornton LLP

Montréal, Canada March 30, 2023

PyroGenesis Canada Inc. Consolidated Statements of Financial Position

December 31, 2022 and 2021 (In Canadian dollars)

	December 31, 2022	December 31, 2021
	\$	\$
Assets		
Current assets		
Cash and cash equivalents [note 8]	3,445,649	12,202,513
Accounts receivable [note 9]	18,624,631	17,639,616
Costs and profits in excess of billings on uncompleted contracts [note 10]	1,051,297	4,922,710
Inventory [note 24]	1,876,411	887,590
Investment tax credits receivable [note 11]	276,404	256,513
Income taxes receivable	14,169	117,029
Current portion of deposits [note 14]	432,550	1,328,452
Current portion of royalties receivable [note 13]	455,556	311,111
Contract assets	499,912	375,789
Prepaid expenses	771,603	717,661
Total current assets	27,448,182	38,758,984
Non-current assets		
Deposits [note 14]	46,053	248,756
Strategic investments [note 12]	6,242,634	14,901,659
Property and equipment [note 15]	3,393,452	3,712,937
Right-of-use assets [note 16]	4,818,744	5,765,993
Royalties receivable [note 13]	952,230	947,543
Intangible assets [note 17]	2,104,848	2,774,198
Goodwill [note 18]	2,660,607	2,660,607
Total assets	47,666,750	69,770,677
Liabilities		
Current liabilities		
Bank indebtedness [note 28]	991,902	_
Accounts payable and accrued liabilities [note 19]	10,115,870	10,069,177
Billings in excess of costs and profits on uncompleted contracts [note 20]	9,670,993	9,400,231
Current portion of term loans [note 21]	69,917	83,004
Current portion of lease liabilities [note 16]	2,672,212	2,934,236
Balance due on business combination [note 6]	2,088,977	2,242,503
Income taxes payable	187,602	23,048
Total current liabilities	25,797,473	24,752,199
Non-current liabilities	<i>,</i> ,	, ,
Lease liabilities [note 16]	2,861,482	2,389,729
Term loans [note 21]	320,070	107,901
Balance due on business combination [note 6]	1,818,798	1,709,700
Deferred income taxes [note 31]	, , , , , <u> </u>	42,394
Total liabilities	30,797,823	29,001,923
Shareholders' equity [note 22]		
Common shares	85,483,223	82,104,086
Warrants	223,200	
Contributed surplus	24,546,960	19,879,055
Accumulated other comprehensive income	402	3,444
Deficit	(93,384,858)	(61,217,831
Total shareholders' equity	16,868,927	40,768,754
Total liabilities and shareholders' equity	47,666,750	69,770,677
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Contingent liabilities, subsequent events [notes 29 and 33].

The accompanying notes form an integral part of the consolidated financial statements.

Approved on behalf of the Board:

[Signed by P. Peter Pascali] P. Peter Pascali

[Signed by Andrew Abdalla] Andrew Abdalla

PyroGenesis Canada Inc.
Consolidated Statements of Comprehensive Loss
For the years ended December 31, 2022 and 2021
(In Canadian dollars)

	2022	2021
	\$	\$
Revenues [note 7]	19,013,503	31,068,350
Cost of sales and services [note 24]	10,869,616	18,636,539
Gross profit	8,143,887	12,431,811
Expenses		
Selling, general and administrative [note 24]	29,025,434	27,237,135
Research and development, net [note 11]	2,317,973	2,535,987
	31,343,407	29,773,122
Net loss from operations	(23,199,520)	(17,341,311)
Changes in fair value of strategic investments [note 12]	(8,340,781)	(21,426,218)
Finance costs, net [note 25]	(550,742)	(404,370)
Loss before income taxes	(32,091,043)	(39,171,899)
Income taxes [note 31]	75,984	(739,960)
Net loss	(32,167,027)	(38,431,939)
Other comprehensive income (loss)		
Items that will be reclassified subsequently to profit or loss		
Foreign currency translation gain (loss) on investments in foreign		
operations	(3,042)	3,444
Comprehensive loss	(32,170,069)	(38,428,495)
Loss per share [note 26]		
Basic	(0.19)	(0.23)
Diluted	(0.19)	(0.23)

The accompanying notes form an integral part of the consolidated financial statements.

PyroGenesis Canada Inc. Consolidated Statements of Changes in Shareholders' Equity For the years ended December 31, 2022 and 2021 (In Canadian dollars)

-	Number of common shares	Common shares	Warrants	Contributed Surplus	Accumulated other comprehensive income	Deficit	Total
Balance - December 31, 2021	170,125,795	82,104,086	_	19,879,055	3,444	(61,217,831)	40,768,754
Shares issued upon exercise of stock options [note 22]	2,440,000	2,283,357	_	(870,558)	_	_	1,412,799
Private placement [note 22]	1,014,600	1,095,780	223,200	_	_	_	1,318,980
Share-based payments	_	_	_	5,538,463	_	_	5,538,463
Other comprehensive loss for the year	_	_	_	_	(3,042)	_	(3,042)
Net loss					<u> </u>	(32,167,027)	(32,167,027)
Balance - December 31, 2022	173,580,395	85,483,223	223,200	24,546,960	402	(93,384,858)	16,868,927
Balance - December 31, 2020	159,145,992	67,950,069	_	10,480,310	_	(19,007,273)	59,423,106
Shares issued upon exercise of stock options [note 22]	3,482,000	1,473,818	_	(364,000)	_	_	1,109,818
Shares issued upon exercise of purchase warrants and compensation options [note 22]	8,337,897	13,085,197	_	_	_	_	13,085,197
Share redemptions for cancellation [note 22]	(840,094)	(404,998)	_	_	_	(3,778,619)	(4,183,617)
Share-based payments	_	_	_	9,762,745	_	_	9,762,745
Other comprehensive income for the year Net loss	_	_	_	_	3,444	(38,431,939)	3,444 (38,431,939)
Balance – December 31, 2021	170,125,795	82,104,086		19,879,055	3,444	(61,217,831)	40,768,754
Ediano	170,120,700	32,104,000	=	10,010,000	0,444	(01,217,001)	10,100,104

The accompanying notes form an integral part of the consolidated financial statements.

PyroGenesis Canada Inc. Consolidated Statements of Cash Flows For the years ended December 31, 2022 and 2021 (In Canadian dollars)

		2021
	<u>2022</u> \$	\$
Cash flows provided by (used in)		Φ
Operating activities		
Net loss	(32,167,027)	(38,431,939)
Adjustments for:	(02,101,021)	(00, 101,000)
Share-based payments	5,538,463	9,762,745
Depreciation of property and equipment	603,894	356,103
Depreciation of right-of-use assets	635,828	570,411
Amortization and write-off of intangible assets	878,030	465,913
Amortization of contract assets	243,626	513,572
Net finance costs	550,742	404,370
Change in fair value of investments	8,340,781	21,426,218
Deferred income taxes	(42,394)	(584,246)
Unrealized foreign exchange	(102,236)	(10,623)
on our control of the	(15,520,293)	(5,527,476)
Net change to working capital items [note 23]	4,391,408	(12,585,956)
	(11,128,885)	(18,113,432)
Investing activities	` · · · •	, , ,
Additions to property and equipment	(396,051)	(1,502,231)
Additions to intangible assets	(290,373)	(246,630)
Purchase of strategic investments	(3,604,000)	(10,588,857)
Disposal of strategic investments	3,922,244	14,252,730
Business combination, net of cash acquired	_	807,945
	(368,180)	2,722,957
Financing activities		
Increase in bank indebtedness	991,902	_
Interest paid	(467,453)	(253,791)
Repayment of term loans	(33,003)	(20,507)
Repayment of lease liabilities	(657,381)	(263,078)
Repayment of balance due on business combination	(217,778)	_
Proceeds from issuance of term loans	292,941	_
Proceeds from issuance of shares upon exercise of warrants	_	13,085,197
Proceeds from issuance of shares upon exercise of stock options	1,412,799	1,109,818
Proceeds from private placement [note 22]	1,318,980	_
Shares repurchased for cancellation	_	(4,183,617)
	2,641,007	9,474,022
Effect of exchange rate changes on cash denominated in foreign currencies	99,194	14,067
Net decrease in cash and cash equivalents	(8,756,864)	(5,902,386)
Cash and cash equivalents - beginning of year	12,202,513	18,104,899
Cash and cash equivalents - end of year	3,445,649	12,202,513

	2022	2021
	\$	\$
Supplemental cash flow disclosure		
Non-cash transactions:		
Purchase of intangible assets included in accounts payable	_	81,693
Purchase of property and equipment included in accounts payable	_	22,557
Addition to contract assets included in accounts payable	_	195,060
Settlement of accounts receivable on business acquisition	_	1,744,400
Accretion interest on balance due on business combination	173,350	110,204
Accretion interest on royalties receivable	118,290	132,809
Accretion on term loan	28,236	12,185
Fair value of HPQ warrants exercised	_	9,181,250
Initial recognition or modification of lease liabilities and right-of-use assets [note 16]:		
Right-of-use assets	(311,421)	2,157,796
Prepaid rent expense	_	(36,903)
Lease liabilities	867,110	2,120,893

The accompanying notes form an integral part of the consolidated financial statements.

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

1. Nature of operations

PyroGenesis Canada Inc. ("PyroGenesis") and its subsidiaries (collectively, the "Company"), incorporated under the laws of the Canada Business Corporations Act, was formed on July 11, 2011. The Company owns patents of advanced waste treatment systems technology and designs, develops, manufactures, and commercialises advanced plasma processes and sustainable solutions to reduce greenhouse gases. The Company is domiciled at 1744 William Street, Suite 200, Montreal, Quebec. The Company is publicly traded on the TSX Exchange under the Symbol "PYR", on NASDAQ in the USA under the symbol "PYR" and on the Frankfurt Stock Exchange (FSX) under the symbol "8PY".

2. Going concern

These consolidated financial statements have been prepared on the going concern basis, which presumes that the Company will be able to continue its operations for the foreseeable and will be able to realize its assets and discharge its liabilities in the normal course of business for the foreseeable future.

The Company is subject to certain risks and uncertainty associated with the achievement of profitable operations such as the successful signing and delivery of contracts and access to adequate financing.

The Company has incurred, in the last years, operating losses and negative cash flows from operations, and as a result, the Company has an accumulated deficit of \$93,384,858 as at December 31, 2022 (\$61,217,831 as at December 31, 2021). Furthermore, there have been unexpected delays in the collection of certain accounts receivable from contracts closed in a prior year. This has resulted in a shortfall in cash flows from operating activities that would be used in funding the Company's operations.

As at December 31, 2022, the Company has working capital of \$1,650,709 (\$14,006,785 as at December 31, 2021) including cash and cash equivalents of \$3,445,649 (\$12,202,513 as at December 31, 2021). The working capital is net of an allowance for credit losses amounting to \$5.023,283 (\$520,000 as at December 31, 2021) as further described in notes 9 and 10. The Company's business plan is dependent upon the successful completion of contracts and also the receipt of payments from certain contracts closed in a prior year and expects these payments to be made during fiscal 2023, as well as the achievement of profitable operations through the signing, completion and delivery of additional contracts or a reduction in certain operating expenses. In the absence of this, the Company is dependent upon raising additional funds to finance operations within and beyond the next twelve months. The Company has been successful in securing financing in the past and has relied upon external financing to fund its operations, primarily through the issuance of equity, debt and convertible debentures. The Company completed a private placement in October 2022 for an amount of \$1,318,980 and also completed another private placement in March 2023 for \$5,000,000 (see note 33). While the Company has been successful in securing financing, raising additional funds is dependent on a number of factors, some of which are outside the Company's control, and therefore there is no assurance that it will be able to do so in the future or that these sources will be available to the Company or that they will be available on terms which are acceptable to the Company. These conditions indicate the existence of a material uncertainty that may cast significant doubt about the Company's ability to continue operating as a going concern.

The consolidated financial statements have been prepared on a going concern basis and do not include any adjustments to the amounts and to classifications of the assets and liabilities that might be necessary should the Company be unable to achieve its plan and continue in business. If the going concern assumption were not appropriate, adjustments, which could be material, would be necessary to the carrying value of assets and liabilities, the reported expenses, and the classification of items on the consolidated statement of financial position.

3. Basis of preparation

(a) Statement of compliance

These financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB"). These financial statements were approved and authorized for issuance by the Board of Directors on March 30, 2023.

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

(b) Functional and presentation currency

These consolidated financial statements are presented in Canadian dollars, which is the functional currency of PyroGenesis, Drosrite International LLC and Pyro Green-Gas Inc. The functional currency of Airscience Italia SRL is the Euro whereas the functional currency of Airscience Technologies Private Limited is the Indian rupee.

(c) Basis of measurement

These financial statements have been prepared on the historical cost basis except for:

- (i) strategic investments which are accounted for at fair value,
- (ii) share-based payment arrangements, which are measured at fair value on the grant date pursuant to IFRS 2, Share-based Payment; and
- (iii) lease liabilities, which are initially measured at the present value of minimum lease payments

(d) Basis of consolidation

For financial reporting purposes, subsidiaries are defined as entities controlled by the Company. The Company controls an entity when it has power over the investee; it is exposed to, or has rights to, variable returns from its involvement with the entity; and it has the ability to affect those returns through its power over the entity.

In instances where the Company does not hold a majority of the voting rights, further analysis is performed to determine whether or not the Company has control of the entity. The Company is deemed to have control when, according to the terms of the shareholder's and/or other agreements, it makes most of the decisions affecting relevant activities.

These consolidated financial statements include the accounts of PyroGenesis and its subsidiaries, Drosrite International LLC and Pyro Green-Gas Inc. and its subsidiaries. Drosrite International LLC is owned by a member of the Company's key management personnel and close member of the Chief Executive Officer ("CEO") and controlling shareholder's family and is deemed to be controlled by the Company. Pyro Green-Gas Inc. and its subsidiaries Airscience Italia SRL and Airscience Technologies Private Limited were acquired by the Company on August 11, 2021 (see note 6). All transactions and balances between the Company and its subsidiaries have been eliminated upon consolidation.

The accounting policies set out below have been applied consistently in the preparation of the consolidated financial statements of all years presented. Finance costs and changes in fair value of strategic investments are excluded from the loss from operations in the consolidated statements of comprehensive loss.

4. Significant accounting policies

(a) Business combinations

Business combinations are accounted for using the acquisition method. Goodwill is measured as the excess of the fair value of the consideration transferred over the net recognized amount of the identifiable assets acquired and liabilities assumed, all measured at the acquisition date.

The consideration transferred is measured as the net of the fair values of assets transferred, liabilities assumed, and equity instruments issued by the Company at the acquisition date, including any asset or liability resulting from a contingent consideration arrangement, in exchange of the acquiree.

The obligation to pay the contingent consideration is classified as a liability and measured as a financial instrument or as a provision. Changes in fair values that qualify as measurement period adjustments of preliminary purchase price allocations are adjusted in the current period and such changes are applied on a retroactive basis.

Acquisition costs that the Company incurs in connection with a business combination are recognized in profit or loss as incurred, except for costs associated with the issuance of debt or equity securities.

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

(b) Revenue recognition

Revenue from contracts is recognized for each performance obligation either over a period of time or at a point in time, depending on which method reflects the transfer of control of the goods and services underlying the particular performance obligation.

i) Long-term contracts

Long-term contracts involve made-to-order customized equipment and machines and are generally priced on a fixed fee basis. Under these contracts, the equipment or machines are made to a customer's specifications and if a contract is terminated by the customer, the Company is entitled to the greater of the amounts invoiced at the termination date and the reimbursement of the costs incurred to date of termination, including a reasonable margin. Agreements that contain multiple deliverables require the Company to determine whether they contain separately identifiable performance obligations and to allocate the consideration received to each performance obligation.

Revenue relating to long-term contracts is recognized over time based on the measure of progress determined by the Company's efforts or inputs towards satisfying the performance obligation relative to the total expected inputs. The degree of completion is assessed based on the proportion of total costs and/or hours incurred to date, compared to total costs and/or hours anticipated to provide the service under the entire contract, excluding the effects of inputs that do not depict performance, e.g. uninstalled materials. For long-term contracts with uninstalled materials, the Company adjusts the transaction price and recognizes revenue on uninstalled materials to the extent of those costs incurred, i.e. at a zero percent profit margin, when certain conditions are met.

Estimates are required to determine anticipated costs and/or hours on long-term contracts. A provision is made for the entire amount of expected loss, if any, in the period in which they are first determinable.

Contract modifications are changes in scope and/or price that are approved by the parties to the contract. Approval may be written, oral or implied by customary business practices, and are legally enforceable. The Company accounts for modifications as a separate contract if the modifications add distinct goods or services that are priced commensurate with stand-alone selling prices or if the remaining goods or services are distinct from those already transferred, otherwise modifications are accounted for as part of the original contract.

Costs and profits in excess of billings on uncompleted contracts and trade receivables are both rights to consideration in exchange for goods or services that the Company has transferred to a customer, however the classification depends on whether such right is only conditional on the passage of time (trade receivables) or if it is also conditional on something else (costs and profits in excess of billings on uncompleted contracts), such as the satisfaction of further performance obligations under the contract. Billings in excess of costs and profits on uncompleted contracts is the cumulative amount received and contractually receivable by the Company that exceeds the right to consideration resulting from the Company's performance under a given contract.

The costs to obtain long-term contracts such as sale commissions are recognized as Contract assets and recognized as selling expenses over time based on degree of completion of the related contract.

ii) Sales of goods

Revenue related to sales of goods, which may include powders and spare parts are measured based on the consideration specified in contracts with customers. The Company recognizes revenue at a point in time when it transfers control of the goods to the buyer. This is generally at the time the customer obtains legal title to the product and when it is physically transferred to the custody transfer point agreed with the customer.

iii) Sale of intellectual property

Sale of intellectual property is recognized at the date the recipient obtains control of the asset. Variable consideration related to the sale of intellectual property is recognized to the extent that it is highly probable that a reversal will not occur when the uncertainty associated with the variable consideration is subsequently resolved.

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

(c) Foreign currency translation

i) Foreign currency transactions

Revenue and expense transactions in foreign currencies are translated into the functional currency of the respective entity using the average exchange rates prevailing at the time of the transaction. Foreign currency balances are translated into the functional currency of the respective entity at year end exchange rates for monetary items and at historical rates for non-monetary items. Translation gains or losses are included in the determination of net loss.

ii) Foreign operations

The assets and liabilities of foreign operations are translated into Canadian dollars using exchange rates prevailing at the end of the reporting period. Revenue and expense items are translated at the average exchange rates for the period. Exchange differences arising from the translation process of foreign operations are recognized as foreign currency translation adjustments in other comprehensive income and accumulated in equity.

(d) Cash and cash equivalents

Cash and cash equivalents are financial instruments readily convertible to a known amount of cash and not subject to a significant risk of changes in fair value. Cash equivalents include instruments with a maturity of three months or less from the date of acquisition and instruments with an original term longer than three months if there is no significant penalty for withdrawal within a three-month period from the date of acquisition.

(e) Inventory

Inventory is composed of spare parts for resale. Inventory is valued at the lower of cost and net realizable value. The cost of inventory is based on the first-in, first-out principle and comprises all costs of purchases. Net realizable value is the estimated selling price in the ordinary course of business, less estimated costs of completion and selling costs.

(f) Income taxes

i) Current tax

Current tax assets and liabilities for the current and prior years are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted by the date of the consolidated statements of financial position.

iii) Deferred tax

Deferred tax is provided using the liability method, providing for temporary differences between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. The temporary difference is not provided for if it arises from the initial recognition of goodwill or the initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss. The amount of deferred tax provided is based on the expected manner of realization or settlement of the carrying amount of assets and liabilities, using tax rates enacted or substantively enacted at the financial position reporting date and whose implementation is expected over the period in which the deferred tax is realized or recovered. A deferred tax asset is recognized only to the extent that it is probable that future taxable profits will be available against which the asset can be used.

Deferred tax assets and liabilities are presented as non-current. Assets and liabilities are offset where the entity has a legally enforceable right to offset current tax assets and liabilities or deferred tax assets and liabilities, and the respective assets and liabilities relate to income taxes levied by the same taxation authority on the same taxable entity or different taxable entities which intend to settle the liabilities and assets on a net basis.

(g) Earnings (loss) per share

The Company presents basic earnings (loss) per share data for its common shares. Basic loss per share is computed by dividing net earnings (loss) by the weighted average number of common shares outstanding during the year. Diluted loss

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

per share is computed similarly to basic earnings per share, except that the weighted average number of shares outstanding is increased to include shares from the assumed exercise of stock options and share purchase warrants, if dilutive. The number of additional shares is calculated by assuming that outstanding share options and warrants were exercised and that the proceeds from such exercises were used to acquire common shares at the average market price during the year. Potential shares from all outstanding stock options and share purchase warrants are excluded from the calculation of diluted loss per share as their inclusion is considered anti-dilutive in years when a loss is incurred.

(h) Property and equipment

Property and equipment are measured at cost less accumulated depreciation and accumulated impairment losses if applicable. Cost includes expenditures that are directly attributable to the acquisition of the asset and bringing the asset into operation. Borrowing costs capitalized to asset under development represents the interest expense calculated under the effective interest method and does not include any fair value adjustments of investments designated at fair value through profit and loss. Government assistance and investment tax credits related to the purchase or development of property and equipment are recorded in reduction of the cost. When major parts of an item of property and equipment have different useful lives, they are accounted for separately. Property and equipment are depreciated from the acquisition date over their respective useful life. Depreciation of an asset under construction begins when it is available for use, i.e. when it is in the location and condition necessary for it to be capable of operating in the manner intended by the Company.

Depreciation is calculated using the following methods and rates:

Computer equipment	Straight line over 3 years
Machinery and equipment	Straight line over 10 years
Automobiles	Straight line over 7 years

Leasehold improvements

Lesser of the lease term or the useful life (20 years)

Impairment losses recognized in prior periods are assessed at each reporting date as to whether there are any indications that the previously recognized losses may no longer exist or may be decreased. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation, had no impairment loss been recognized for the asset in prior years.

Property and equipment are assessed for impairment whenever there is an indication of impairment.

Depreciation methods, useful lives and residual values are reviewed at each financial year end and adjusted prospectively if appropriate.

(i) Leases

Under IFRS 16 Leases, at inception, the Company assesses whether a contract is, or contains, a lease based on whether the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

The Company recognizes a right-of-use asset and a lease liability at the commencement date of the lease, i.e., the date the underlying asset is available for use.

Right-of-use assets

Right-of-use assets are measured at cost, less any accumulated depreciation and accumulated impairment losses, and adjusted for any remeasurement of lease liabilities. Cost of right-of-use assets is comprised of:

- the initial measurement amount of the lease liabilities recognized;
- any lease payments made at or before the commencement date, less any lease incentives received;
- any initial direct costs incurred; and
- an estimate of costs to dismantle and remove the underlying asset, restore the site on which it is located or restore the underlying asset to the condition required by the terms and conditions of the lease contract.

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Right-of-use assets are depreciated over the shorter period of the lease term and the useful life of the underlying asset. If a lease transfers ownership of the underlying asset or the cost of the right-of-use asset reflects that the Company expects to exercise a purchase option, the related right-of-use asset is depreciated over the useful life of the underlying asset based on periods detailed above. The depreciation starts at the commencement date of the lease. Right-of-use assets are assessed for impairment whenever there is an indication that the right-of-use assets may be impaired.

Lease liabilities

Lease liabilities are initially measured at the present value of the lease payments that are not paid at the commencement date over the lease term. The present value of the lease payments is determined using the lessee's incremental borrowing rate at the commencement date if the interest rate implicit in the lease is not readily determinable. The incremental borrowing rate is a function of the lessee's incremental borrowing rate, the nature of the underlying asset, the location of the asset, the length of the lease and the currency of the lease contract. Generally, the Company uses the lessee's incremental borrowing rate for the present value. At the commencement date, lease payments generally include fixed payments, less any lease incentives receivable, variable lease payments that depend on an index (e.g., based on inflation index) or a specified rate, and payments of penalties for terminating the lease, if the lease term reflects the lessee exercising the option to terminate the lease. Lease payments also include amounts expected to be paid under residual value guarantees and the exercise price of a purchase option if the Company is reasonably certain to exercise that option.

Variable lease payments that do not depend on an index or a specified rate are not included in the measurement of lease liabilities but instead are recognized as expenses in the period in which the event or condition that triggers the payment occurs.

After the commencement date, the carrying amount of lease liabilities is increased to reflect the accretion of interest and reduced to reflect lease payments made. In addition, the carrying amount of lease liabilities is remeasured when there is a change in future lease payments arising from a change in an index or specified rate, if there is a modification to the lease terms and conditions, a change in the estimate of the amount expected to be payable under residual value guarantee, or if the Company changes its assessment of whether it will exercise a termination, extension or purchase option. The remeasurement amount of the lease liabilities is recognized as an adjustment to the right-of-use asset, or in the profit and loss statement when the carrying amount of the right- of-use asset is reduced to zero.

Classification and presentation of lease-related expenses

Depreciation charge for right-of-use assets, expenses related to variable lease payments not included in the measurement of lease liabilities and loss (gain) related to lease modifications are allocated in the Company's profit and loss statement based on their function within the Company, while interest expense on lease liabilities is presented within finance costs.

Cash flow classification

Lease payments related to the principal portion of the lease liabilities are classified as cash flows from financing activities while lease payments related to the interest portion of the lease liabilities are classified as interest paid within cash flows from financing activities. Lease incentives received are classified as cash flows from investing activities. Variable lease payments not included in the measurement of lease liabilities are classified as cash flows from operating activities.

(i) Government assistance and investment tax credits

Investment tax credits are comprised of scientific research and experimental development tax credits. Government assistance and investment tax credits are recognized when there is reasonable assurance of their recovery and recorded as a reduction of the related expense or cost of the asset acquired, as applicable. Investment tax credits are subject to the customary approvals by the pertinent tax authorities. Adjustments required, if any, are reflected in the year when such assessments are received.

(k) Intangible assets and Goodwill

Intangible assets acquired separately are measured at cost on initial recognition. Following initial recognition, intangible assets are carried at cost less any accumulated amortization and any accumulated impairment losses.

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Identifiable intangible assets acquired in a business combination are recognized separately from goodwill if they meet the definition of an intangible asset and if their fair value can be measured reliably. The cost of these intangible assets equals their acquisition-date fair value.

Subsequent to initial recognition, identifiable intangible assets acquired in a business combination are recorded at cost less accumulated amortization and impairment losses, if they are amortizable, otherwise only at cost net of accumulated impairment losses. The useful lives of intangible assets are assessed as either finite or indefinite.

Intangible assets with finite lives are amortized over the useful life of the asset and assessed for impairment whenever there is an indication of impairment. Amortization expense on the intangible assets with finite lives is recognized in the consolidated statements of comprehensive loss.

Research costs are charged to comprehensive loss in the year they are incurred, net of related investment tax credits. Development costs are charged to comprehensive loss in the year they are incurred net of related investment tax credits unless they meet specific criteria related to technical, market and financial feasibility in order to be recognized as intangible assets which include:

- the technical feasibility of completing the intangible asset so that it will be available for use or sale;
- the Company has the intention to complete and the ability to use or sell the asset;
- the asset will generate future economic benefits;
- the Company has the resources to complete the asset; and
- ability to measure reliably the expenditure during development.

Costs to establish patents for internally developed technology are considered development costs and are charged to comprehensive loss in the year they are incurred unless they meet specific criteria related to technical, market and financial feasibility. Patent costs include legal and other advisor fees to obtain patents, and patent application fees.

Amortization of the development costs is calculated on a straight-line basis over the remaining useful life of the related patent and begins when development is complete. During the period of development, the asset is tested annually for impairment. Residual values and useful lives are reviewed at each reporting date.

Amortization is calculated on a straight-line basis:

	Useful life
Production backlog	30 months
Patents and development costs	_ 1 to 21 years

Goodwill represents the future economic benefits arising from a business combination that are not individually identified and separately recognized. Goodwill is carried at cost less accumulated impairment losses. Goodwill is not amortized but is tested for impairment annually or if there is an indication of impairment. Impairment losses recognized for goodwill cannot be reversed.

(I) Impairment testing of goodwill, other intangible assets, property and equipment and right-of-use assets

The carrying amounts of the Company's non-financial assets are assessed at each reporting date to determine whether there is an indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated.

For impairment assessment purposes, assets are grouped at the lowest levels for which there are largely independent cash inflows (cash-generating units). As a result, some assets are tested individually for impairment, and some are tested at cash-generating unit level. Goodwill is allocated to those cash-generating units that are expected to benefit from synergies of a related business combination and represents the lowest level within the Company at which management monitors goodwill.

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Cash-generating units to which goodwill has been allocated are tested for impairment at least annually. All other individual assets or cash-generating units are tested for impairment whenever events or changes in circumstances indicate the carrying amount may not be recoverable.

The recoverable amount of an asset or cash-generating unit (CGU) is the greater of its value in use and its fair value less costs to sell. In assessing value in use, the estimated future cash flows are discounted to their present value using a pretax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For the purposes of testing non-financial assets for impairment, management has identified one CGU.

An impairment loss is recognized if the carrying amount of an asset or its CGU exceeds its recoverable amount. Impairment losses are recognized in the consolidated statements of comprehensive loss. Impairment losses recognized in respect of the CGU are allocated first to reduce the carrying amount of goodwill allocated to the units, and then to reduce the carrying amounts on a pro-rata basis of the other assets in the unit.

(m) Provisions and contingent liabilities

Provisions for legal disputes, onerous contracts or other claims are recognized when the Company has a present legal or constructive obligation as a result of a past event, it is probable that an outflow of economic resources will be required from the Company and amounts can be estimated reliably. The timing or amount of the outflow may still be uncertain.

Provisions are measured at the estimated expenditure required to settle the present obligation, based on the most reliable evidence available at the reporting date, including the risks and uncertainties associated with the present obligation. Where there are a number of similar obligations, the likelihood that an outflow will be required in settlement is determined by considering the class of obligations as a whole. Provisions are discounted to their present values, where the time value of money is material.

No liability is recognized if an outflow of economic resources as a result of present obligations is not probable. Such situations are disclosed as contingent liabilities unless the outflow of resources is remote.

(n) Employee benefits

Share-based payments

The Company applies a fair value-based method of accounting to all share-based payments. Employee and director stock options are measured at their fair value of each tranche on the grant date and recognized in its respective vesting period. Non-employee stock options are measured when the services are rendered by the consultant at the fair value of the services received if the fair value can be measured reliably. In the case the fair value of the services cannot be measured reliably, the services are measured indirectly using the fair value of the equity instruments granted at grant date. The cost of stock options is presented as share-based payment expense. On the exercise of stock options, share capital is credited for the consideration received and for the fair value amounts previously credited to contributed surplus. The Company uses the Black-Scholes option-pricing model to estimate the fair value of share-based payments.

Deferred profit-sharing plan

The Company established a yearly Deferred Profit-Sharing Plan ("DPSP") for all eligible employees who have materially and significantly contributed to the prosperity and profits of the Company. The significance of any contribution of any employee to the prosperity and profits of the Company for purposes of eligibility in the DPSP is determined by the Board of Directors of the Company upon such relevant information as the Board, in its sole discretion, may find relevant. All related persons to the Company are excluded from participating in the DPSP.

For all eligible employees, the Company is required to contribute to the DPSP out of the profits of the Company. The amount of the Company's contribution will be such amount which, in the opinion of its Board of Directors, is warranted by the profits and overall financial position of the Company. During the year, the Company contributed \$Nil to the DPSP (\$Nil in 2021). Obligations for contributions to the DPSP are recognized as an employee benefit expense in the consolidated statements of comprehensive loss in the periods during which services are rendered by employees.

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Short-term employee benefits

Short-term employee benefit obligations are measured on an undiscounted basis and are expensed as the related service is provided.

A liability is recognized for the amount expected to be paid under the short-term incentive plan if the Company has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee, and the obligation can be estimated reliably.

(o) Equity instruments

Issuance of equity instruments

Incremental costs directly attributable to the issue of equity-classified shares are recognized as a deduction from the common shares and warrants, net of any tax effects. Upon issuance of units, the Company uses the residual value to allocate the net proceeds between common shares and warrants.

Extinguishing financial liabilities with equity instruments

When equity instruments issued to a creditor to extinguish all or part of a financial liability are recognized initially, the Company measures them at the fair value of the equity instruments issued, unless that fair value cannot be reliably measured. If the fair value of the equity instruments issued cannot be reliably measured, then the equity instruments shall be measured to reflect the fair value of the financial liability extinguished.

Contributed surplus

Contributed surplus includes amounts related to equity-settled share-based payments until such equity instruments are exercised or settled, in which case the amounts are transferred to common shares or reversed upon forfeiture if not vested. It also includes the unexercised conversion option at the maturity of the convertible debentures.

(p) Financial Instruments

Recognition:

The Company recognizes a financial asset or a financial liability when it becomes a party to the contractual provisions of the instrument.

Purchases or sales of financial assets that require delivery of assets within the time frame generally established by regulation or convention in the marketplace (regular way trades) are recognized on the trade date, i.e., the date that the Company commits to purchase or sell the asset.

Classification

Financial assets are classified at amortized cost, fair value through profit or loss ("FVTPL") or fair value through other comprehensive income ("FVOCI") based on the Company's business model for managing the financial assets and the contractual cash flow characteristics of these assets. Assessment and decision on the business model approach used is an accounting judgment.

A financial asset is measured at amortized cost if it is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows and its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding. The Company includes in this category cash and cash equivalents, trade accounts receivable, other receivables, royalties receivable and deposits.

A financial asset is measured at fair value through profit or loss ("FVTPL") if:

(a) Its contractual terms do not give rise to cash flows on specified dates that are solely payments of principal and interest (SPPI) on the principal amount outstanding; or

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- (b) It is not held within a business model whose objective is either to collect contractual cash flows, or to both collect contractual cash flows and sell; or
- (c) At initial recognition, it is irrevocably designated as measured at FVTPL when doing so eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise from measuring assets or liabilities or recognizing the gains and losses on them on different bases.

The Company includes in this category strategic investments in equity instruments.

All financial liabilities, other than those measured at fair value through profit or loss, are included in the financial liabilities measured at amortized cost. The Company includes in this category bank indebtedness, accounts payable and accrued liabilities and term loans. The balance due on business combination is measured at FVTPL.

Initial measurement

Financial assets and liabilities (other than financial assets at FVTPL) are measured initially at their fair value plus any directly attributable incremental costs of acquisition or issue.

Financial assets and financial liabilities at FVTPL are recorded in the consolidated statements of financial position at fair value. All transaction costs for such instruments are recognized directly in profit or loss.

Subsequent measurement

Financial assets (other than financial assets at FVTPL) are measured at amortized cost using the effective interest method less any allowance for impairment. Gains and losses are recognized in profit or loss when the debt instruments are derecognized or impaired, as well as through the amortization process.

Financial liabilities are measured at amortized cost using the effective interest method except for derivatives and financial liabilities designated at FVTPL. Gains and losses are recognized in profit or loss when the liabilities are derecognized, as well as through the amortization process. Changes in fair value of financial liabilities attributable to changes in the entity's own credit risk are to be presented in other comprehensive income unless they affect amounts recorded in income.

Fair value measurement principles

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

Where financial assets and financial liabilities measured at fair value though profit or loss have a quoted price in an active market at the reporting date, the fair value is based on this price. A financial instrument is regarded as quoted in an active market if quoted prices are readily and regularly available from a stock exchange and those prices represent actual and regularly occurring market transactions on an arm's length basis.

Securities traded on stock exchanges are stated at market price based on the closing price on the relevant valuation day.

Derecognition

A financial asset is derecognized where the rights to receive cash flows from the asset have expired, or the Company has transferred its rights to receive cash flows from the asset. The Company derecognizes a financial liability when the obligation under the liability is discharged, cancelled, or expired.

Offsetting of financial instruments

Financial assets and financial liabilities are offset, and the net amount reported in the consolidated statements of financial position if, and only if, there is a currently enforceable legal right to offset the recognized amounts and there is an intention to settle on a net basis, or to realize the assets and settle the liabilities simultaneously.

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Impairment of financial instruments

The Company applies the "expected credit loss" ("ECL") model to financial assets measured at amortized cost. The Company's financial assets subject to this impairment model are cash and cash equivalents, trade and other receivables, costs and profits in excess of billings on uncompleted contracts, royalties receivable and deposits.

The trade accounts receivable have no financing component and have maturities of less than 12 months at amortized cost and, as such, the Company applies the simplified approach for expected credit losses (ECLs) to all its trade accounts receivable. Therefore, the Company recognizes a loss allowance based on lifetime ECLs at each reporting date.

The Company's approach to ECLs reflects a probability-weighted outcome, the time value of money and reasonable and supportable information that is available without undue cost or effort at the reporting date about past events, current conditions, and forecasts of future economic conditions.

The Company uses the provision matrix as a practical expedient to measure ECLs on trade receivables and costs and profits in excess of billings on uncompleted contracts, based on days past due for groupings of receivables with similar loss patterns. Contracts with particular recovery history are analysed separately from other accounts. The loss rates are based on historical observed loss rates over the expected life of the receivables and are adjusted for forward-looking estimates to reflect differences between economic conditions during the period over which the historical data has been collected.

Impairment losses are recognized in profit or loss and reflected in an allowance account presented in reduction of receivables and cost in excess of billings on uncompleted contracts.

Write-off

The gross carrying amount of a financial asset is written off when the Company has no reasonable expectations of recovering a financial asset in its entirety or a portion thereof.

Failure to engage and communicate with the Company on alternative payment arrangements and failure to make payments within 90 days, amongst others, are considered possible indicators of no reasonable expectation of recovery of accounts receivable.

Effective Interest Method

The effective interest method is a method of calculating the amortized cost of a financial asset/financial liability and of allocating interest income/expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts/payments (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the financial instrument, or (when appropriate) a shorter period, to the net carrying amount on initial recognition.

- (q) Future Changes and Amendments to Accounting Standards and Interpretations
- i) IAS 1 Presentation of Financial Statements Accounting Policies

In 2021, the IASB amended IAS 1, Presentation of Financial Statements, to require entities to disclose their material accounting policy information rather than their significant accounting policies. Additional amendments to IAS 1 are made to explain how an entity can identify a material accounting policy. The amendments are effective for annual reporting periods beginning on or after January 1, 2023, with earlier application permitted.

ii) IAS 1 Presentation of Financial Statements - Classification of Liabilities

The IASB released Classification of Liabilities as Current or Non-current (Amendments to IAS 1), which clarifies the guidance in IAS 1 Presentation of Financial Statements on whether a liability should be classified as either current or non-current relating to the right to defer settlement of the liability for at least twelve months after the reporting date. The amendment is effective for annual reporting periods beginning on or after January 1, 2023, with earlier application permitted.

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iii) IAS 12 Income Taxes

The IASB released Deferred Tax Related to Assets and Liabilities Arising from a Single Transaction (Amendments to IAS 12). The amendment relates to the recognition of deferred tax when an entity accounts for transactions, such as leases or decommissioning obligations, by recognizing both an asset and a liability. The objective of this amendment is to narrow the initial recognition exemption in paragraphs 15 and 24 of IAS 12, so that it would not apply to transactions that give rise to both taxable and deductible temporary differences, to the extent the amounts recognized for the temporary differences are the same. The amendment is effective for annual reporting periods beginning on or after January 1, 2023, with earlier application permitted.

iv) IAS 37 Provisions, Contingent Liabilities and Contingent Assets

The IASB released Onerous Contracts - Cost of Fulfilling a Contract (Amendments to IAS 37). The amendments specify which costs an entity includes in determining the cost of fulfilling a contract for the purpose of assessing whether the contract is onerous. Costs to be included comprise the costs that relate directly to the contract, which includes both incremental costs of fulfilling the contract and an allocation of other costs that relate directly to fulfilling the contract. The amendment is effective for annual reporting periods beginning on or after January 1, 2023, with earlier application permitted.

The Company has determined that the adoption of these standards or amendments will not have a significant impact on its consolidated financial statements as of the date of adoption.

5. Significant accounting judgments, estimates and assumptions

The preparation of consolidated financial statements requires management to make judgments, estimates and assumptions based on currently available information that affect the reported amounts of assets, liabilities and contingent assets and liabilities at the date of the consolidated financial statements and reported amounts of revenues and expenses during the reporting period. Estimates and judgments are continuously evaluated and are based on management's experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. However, actual results could differ from those estimated. By their very nature, these estimates are subject to measurement uncertainty and the effect of any changes in estimates on the financial statements of future periods could be material.

In the process of applying the Company's accounting policies, management has made the following judgments, estimates, and assumptions which have the most significant effect on the amounts recognized in the consolidated financial statements.

Critical judgments in applying accounting policies

(a) Assessment of whether there is any indication that property and equipment, right-of-use assets and intangible assets may be impaired

At each reporting date, the Company reviews the carrying amounts of its property and equipment, right-of-use assets and intangible assets with a finite useful life to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. Management's judgment is required in assessing whether there is any indication that an asset may be impaired.

(b) Intangible assets

The recognition of development costs as intangible assets requires judgments to determine whether the required criteria for recognition are met including management estimates of future economic benefits.

(c) Sale of intellectual property and related royalties

The recognition of variable consideration related to the sale of intellectual property requires management's judgments to determine whether it is highly probable that a reversal will not occur when the uncertainty associated with the variable consideration is subsequently resolved.

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(d) Investment tax credits receivable

The investment tax credits are estimated by management based on quantitative and qualitative analysis and interpretation of various government programs, related restrictions, limitations, definitions, and eligibility conditions. Uncertainty over the eligibility and final assessment by taxation authorities of investment tax credits requires judgment. Management involves its technical staff and external specialists in determining if the expenditures meet the requirements of the different tax credit claims.

Key sources of estimation uncertainty

(e) Revenue recognition

Revenue recognition for long-term contracts completion requires the use of estimates to determine the recorded amount of revenues, costs in excess of billings and billings in excess of costs and profits on uncompleted contracts.

The determination of anticipated costs for completing a contract is based on estimates that can be affected by a variety of factors, including the cost of materials, labour and sub-contractors, as well as potential claims from customers and subcontractors.

As risks and uncertainties are different for each project, the sources of variations between anticipated costs and actual costs incurred will also vary by project. The determination of estimates is based on the Company's business practices as well as its historical experience. Estimates are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimate is revised.

Given this estimation process, it is possible that changes in future conditions could cause a material change in the recognized amount of revenues and costs and profits in excess of billings on uncompleted contracts and accrued expenses.

Agreements that contain multiple deliverables require the use of judgment to determine whether they contain separately identifiable performance obligations and to allocate the consideration received to each performance obligation.

(f) Share-based payments

The Company uses the fair value method of valuing compensation cost associated with the Company's stock option plan. Estimating fair value requires determining the most appropriate valuation model for a grant of equity instruments, which is dependent on the terms and conditions of the grant. This also requires determining the most appropriate inputs to the valuation model including the expected life of the option and volatility. The assumptions and models are discussed in note 22

(g) Useful lives of property and equipment and intangible assets

The Company estimates the useful lives of property and equipment and intangible assets based on the period over which the assets are expected to be available for use. The estimated useful lives of property and equipment and intangible assets are reviewed periodically and are updated if expectations differ from previous estimates due to physical wear and tear and legal or other limits on the use of the relevant assets. In addition, the estimation of the useful lives of property and equipment and intangible assets are based on management's experience with similar assets. It is possible, however, that future results of operations could be materially affected by changes in the estimates brought about by changes in factors mentioned above. The amounts and timing of recorded expenses for any period would be affected by changes in these factors and circumstances. Useful lives, depreciation and amortization rates and residual values are reviewed at least annually.

(h) Impairment of non-financial assets and goodwill

In assessing impairment, management estimates the recoverable amount of each asset or cash generating unit based on expected future cash flows and uses an interest rate to discount them. Estimation uncertainty relates to assumptions about future operating results and the determination of a suitable discount rate (see note 4 (I)).

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(i) Fair value of strategic investments

Where the fair values of investments recorded in the consolidated statements of financial position cannot be derived from active markets, they are determined using valuation techniques including the Black-Scholes model. The inputs to these models are taken from observable markets where possible, but where this is not feasible, a degree of judgment is required in establishing the fair values. The judgments include considerations of inputs such as the expected volatility and the initial allocation of the consideration paid between the fair value of the common shares and warrants received. Should any of the inputs to these models or changes in assumptions about these factors occur, this could affect the reported fair value of the investments.

(j) Right-of-use assets and lease liabilities

In determining the carrying amount of the right-of-use assets and corresponding lease liabilities, assumptions include the non-cancellable term of the lease plus periods covered by an option to renew or purchase the assets, estimated useful lives of the related assets, and incremental borrowing rate. Renewal and purchase options are only included in the lease term if management is reasonably certain to renew. Management considers factors such as market conditions, comparable rental rates and similar property values. The Company is also required to estimate the incremental borrowing rate specific to each portfolio of leased assets with similar characteristics if the interest rate in the lease is not readily determined. Management determines the incremental borrowing rate using the base rate for similar loans plus a risk premium.

(k) Income taxes

The Company has unused available tax losses, deductible temporary differences and investment tax credits. The Company recognizes deferred income tax assets for these unused tax losses and deductible temporary differences only to the extent that, in management's opinion, it is probable that future taxable profit will be available against which these available tax losses and temporary differences can be utilized. The Company recognizes investment tax credits when it has reasonable assurance that it has complied with the conditions of the program and that the amounts will be realized (i.e. that it will generate future federal income taxes payable against which the tax credits can be applied). The Company's projections of future taxable profit involve the use of significant assumptions and estimates with respect to a variety of factors, including future sales and operating expenses. There can be no assurance that the estimates and assumptions used in our projections of future taxable income will prove to be accurate predictions of the future, and in the event that our assessment of the recoverability of these deferred tax assets and investment tax credits changes in the future, a material increase or reduction in the carrying value of these deferred tax assets and investment tax credits could be required, with a corresponding charge to net loss.

(I) Business combinations

Fair value of assets acquired and liabilities assumed in a business combination is estimated based on information available at the date of acquisition and involves considerable judgment in determining the fair values assigned to the identifiable assets acquired and liabilities assumed on acquisition. Among other things, the determination of these fair values involves the use of discounted cash flow analyses and estimated profit margins on contracts in progress. In addition, the determination of the contingent consideration due on the business combination is based on the estimations of the probability and timing of completing the predetermined milestones (see note 6);

(m) COVID-19 pandemic

The COVID-19 pandemic continues to cause significant financial market and social dislocation. The situation is dynamic with various cities and countries around the world responding in different ways to address the outbreak. While the Company has experienced the impact of the outbreak of the Coronavirus (COVID 19) on its operations, it had continued to operate during the current pandemic. In the event of a prolonged continuation of the pandemic, it is not clear what the potential impact may be on the Company's business, financial position and financial performance.

6. Business combination

On August 11, 2021, the Company completed the acquisition of Pyro Green-Gas Inc. and its subsidiaries, a Montreal-based company which offers technologies, equipment, and expertise in the area of biogas upgrading, as well as air pollution controls, for a maximum purchase price consideration of \$4,355,600 in cash, subject to customary post-closing adjustments.

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In addition, the Company settled a pre-existing loan receivable from Pyro Green-Gas Inc. of approximately \$1,744,000. The transaction was executed through a purchase of the entirety of the common class "A" shares of Pyro Green-Gas Inc. This acquisition enables the Company to springboard into the renewable natural gas market and provides an advantage compared to building its own operations. In addition, the Company will now have a presence in Italy and India, and the acquisition will provide potential synergies with the Company's land-based waste destruction offerings. The purchase price will be paid upon the achievement of various contract and business-related milestones by Pyro Green-Gas Inc. The Company's assessment is that these milestones will be realized at various moments during the next 30 months following the date of the acquisition. The contingent consideration was estimated using a discount rate of 8%.

The acquisition was accounted for using the purchase method and the final allocation of the purchase price is as follows:

	
Total consideration	
Consideration paid at closing	1
Contingent consideration	3,841,999
Consideration paid at closing and continent consideration	3,842,000
Settlement of pre-existing loan receivable from Pyro Green-Gas	1,744,400
	5,586,400

Net assets acquired	
Current assets ¹	5,186,086
ROU asset	477,608
Property and equipment	42,552
Intangible assets and Goodwill ²	4,780,607
Deferred income tax asset	79,360
Current liabilities	(4,507,907)
Non-current liabilities	(471,906)
	5,586,400

¹ Includes \$807,946 of cash and trade receivables with a net fair value of \$3,255,000, including an allowance for expected credit losses of \$512.592.

During the period ended December 31, 2021, the Company recognized revenue of \$6,800,090 and net earnings of \$807,395 related to the operations generated by Pyro Green-Gas Inc. since the acquisition date.

In connection with this acquisition, the Company incurred acquisition-related costs of \$101,157, recognized within Selling, General and Administrative expenses in the 2021 consolidated statements of comprehensive loss.

The maximum purchase price consideration of \$4,355,600 was discounted to \$3,841,999, at August 11, 2021 and an accretion expense of \$173,350 was recognized in Net finance costs in the consolidated statements of comprehensive loss for the year ended December 31, 2022, compared to a recognized accretion expense of \$110,204 during the year ended December 31, 2021.

² The goodwill of \$2,660,607 recorded on the transaction is mainly attributable to the expected growth in biogas upgrading market and the expertise of the workforce, and it is not expected to be deductible for tax purposes.

PyroGenesis Canada Inc.

Notes to the Consolidated Financial Statements

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7. Revenues

Revenues by product line:

The company's revenues are generated primarily from the following:

	2022	2021
	<u> </u>	\$
Revenue from contracts with customers by product line:		
High purity metallurgical grade silicon & solar grade silicon from quartz		
(PUREVAP™)	6,272,697	6,138,111
Aluminium and zinc dross recovery (DROSRITE™)	1,912,807	7,940,771
Development and support related to systems supplied to the U.S. Navy	1,288,356	7,522,809
Torch-related sales	5,558,210	2,084,511
Biogas upgrading and pollution controls	3,347,443	6,800,090
Other sales and services	633,990	582,058
	19,013,503	31,068,350

The following is a summary of the Company's revenues by revenue recognition method:

	2022	2021
	\$	\$
Revenue from contracts with customers:		
Sales of goods under long-term contracts recognized over time	13,997,163	25,918,594
Sales of goods at a point of time	1,135,498	1,533,910
Other revenue:		
Sale of intellectual properties (i)	3,600,000	3,300,000
Royalties	280,842	315,846
	19,013,503	31,068,350

See note 32 for sales by geographic area.

(i) Sale of intellectual properties

During the year, the Company sold intellectual property to a subsidiary of a company in which it holds a strategic investment for a non-refundable fee of \$3,600,000. Under the terms of the sale agreement, control of the intellectual property was transferred to the purchaser and the Company has no obligation to undertake activities that will significantly affect the intellectual property.

In June 2021, the Company sold intellectual property to a subsidiary of a company in which it holds a strategic investment for a non-refundable fee of \$3,300,000. Under the terms of the sale agreement, control of the intellectual property was transferred to the purchaser and the Company has no obligation to undertake activities that will significantly affect the intellectual property. The terms of the agreement also include additional variable consideration that can be received based on the greater of 10% of sales made by the purchaser, and royalties of \$50,000 in 2023, \$100,000 in 2024, \$150,000 in 2025, and \$200,000 in 2026 and every year thereafter.

Transaction price allocated to remaining performance obligations

As at December 31, 2022, revenue expected to be recognized in the future related to performance obligations that are unsatisfied (or partially satisfied) at the reporting date is \$26,741,550 (2021 - \$34,258,148, excluding a contract which was terminated in the fall of 2022). Revenue will be recognized as the Company satisfies its performance obligations under long-term contracts, which is expected to occur over the next 3 years.

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

8. Cash and cash equivalents

As at December 31, 2022 and 2021, there are no restrictions on cash and cash equivalents. Cash and cash equivalents include the following components:

	2022	2021
	\$	\$
Cash	3,445,649	3,568,561
Guaranteed investment certificates	_	8,633,952
Cash and cash equivalents	3,445,649	12,202,513

Guaranteed investment certificates were instruments issued by Canadian financial institutions, bore interest at rates varying from 0.08% to 0.86%, and held to maturity or were redeemed during the year 2022.

9. Accounts receivable

Details of accounts receivable based on past due terms were as follows:

	December 31,	December 31,
	2022	2021
	\$	\$
Current	6,578,269	1,919,786
1 – 30 days	15,959	32,028
31 – 60 days	57,944	7,006,652
61 – 90 days	718,239	788,330
Greater than 90 days	13,790,716	6,317,239
Holdback receivable	1,536,115	974,878
Total trade accounts receivable	22,697,242	17,038,913
Allowance for expected credit loss	(4,693,283)	(520,000)
Other receivables	240,560	270,536
Sales tax receivable	380,112	850,167
	18,624,631	17,639,616

As at December 31, 2022 the allowance for expected credit loss on trade accounts receivable is \$4,693,283 (2021 - \$520,000), \$543,283 which was included through the business combination and only varied due to foreign exchange, and \$4,150,000 recognized during 2022. The portion recognized during the year includes \$3,765,000 attributable to one specific customer, whereby the carrying amount has been reduced from \$12,810,231 to \$9,045,231. The carrying value of all other trade receivables was reduced from \$9,887,011 to \$8,958,728. On the basis of the Company's expected credit loss policy, the allowance was determined generally by applying a loss rate of 1% on balances 1-30 days past the invoice date, 2% for 31-60 days, 3% for 61-90 days and a minimum of 10% for those beyond 90 days. Specific consideration was applied for situations where the receivable is a holdback on a contract, and also for customers that have exceeded normal payment terms.

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The closing balance of the trade receivables credit loss allowance as at December 31, reconciles with the trade receivables credit loss allowance opening balance as follows:

Opening allowance January 1, 2021	_
Business combination	512,592
Foreign exchange	7,408
Loss allowance at December 31, 2021	520,000
Loss recognized during the year	4,150,000
Foreign exchange	23,283
Loss allowance at December 31, 2022	4,693,283

10. Costs and profits in excess of billings on uncompleted contracts

As at December 31, 2022, the Company had eighteen contracts with total billings of \$10,475,299 which were less than total costs incurred and had recognized cumulative revenue of \$11,856,596 since those projects began. This compares with fourteen contracts with total billings of \$16,676,700 which were less than total costs incurred and had recognized cumulative revenue of \$21,599,410 as at December 31, 2021.

The net amount of \$1,051,297 as at December 31, 2022 includes an expected credit loss allowance of \$330,000 (\$Nil as at December 31, 2021). On the basis of the Company's expected credit loss policy, the allowance was determined generally by applying a loss rate of 2% on all balances, and adjusting for specific situations, such as past due customers, whereby the loss rate varied from 25% to 50%.

Changes in costs and profits in excess of billings on uncompleted contracts during the year are explained by \$4,164,109 (2021 - \$983,891) recognized at the beginning of the year being transferred to accounts receivable, \$622,696 (2021 - \$4,832,968) resulting from changes in the measure of progress and the expected credit loss allowance of \$330,000 (\$Nil in 2021).

11. Investment tax credits

An amount recognized in 2022 included \$169,434 (2021 - \$202,472) of investment tax credits earned in the year, as well as \$Nil (2021 - \$706,000) of investment tax credits earned in prior years that no longer met the criteria for recognition in 2021. \$70,258 (2021 - \$148,695) of the investment tax credits recognized in the year was recorded against cost of sales and services, \$69,176 (2021 - (\$684,709)) against research and development expenses and \$30,000 (2021 - \$32,486) against selling general and administrative expenses.

Eligible scientific research and experimental development ("SR&ED") expenses for the year amounted to \$2,783,450 (2021 – \$2,000,853) less investment tax credits of (\$169,434) (2021 – (\$684,709)), less government grants of \$296,043 (2021 – \$149,575) totalling \$2,317,973 (2021 – \$2,535,987).

12. Strategic investments

	December 31, 2022	December 31, 2021
	\$	\$
Beauce Gold Fields ("BGF") shares – level 1	56,419	123,095
HPQ Silicon Inc. ("HPQ") shares - level 1	5,415,749	12,306,196
HPQ warrants – level 3	770,466	2,472,368
	6,242,634	14,901,659

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

The change in the strategic investments is summarized as follows:

	("BGF") shares – level 1		("HPQ") shares - level 1		HPQ warrants – level 3	
	Quantity	\$	Quantity	\$	Quantity	\$
Balance, December 31, 2020	1,025,794	123,095	14,990,200	16,489,220	25,844,600	23,379,435
Additions	_	_	8,268,000	8,070,109	_	_
Exercised	_	_	16,250,000	11,700,000	(16,250,000)	(9,181,250)
Disposed	_	_	(12,755,600)	(14,252,732)	_	_
Change in the fair value		<u> </u>		(9,700,401)		(11,725,817)
Balance, December 31, 2021	1,025,794	123,095	26,752,600	12,306,196	9,594,600	2,472,368
Additions	_	_	6,800,000	3,196,000	6,800,000	408,000
Disposed	_	_	(11,447,500)	(3,922,244)	_	_
Change in the fair value		(66,676)		(6,164,203)		(2,109,902)
Balance, December 31, 2022	1,025,794	56,419	22,105,100	5,415,749	16,394,600	770,466

The Company owns 9.82% on a fully diluted basis of HPQ as at December 31, 2022 (2021 - 9.64%) and has other business transactions with this entity—see notes 7(i) and 13.

The following table sets out the details and activity of the HPQ warrants:

	Number of warrants			Number of warrants	Exercise
Expiry date	Dec 31, 2021	Additions	Exercised	Dec 31, 2022	price (\$)
April 29, 2023	1,200,000	_	_	1,200,000	0.10
June 2, 2023	4,394,600	_	_	4,394,600	0.10
September 3, 2023	4,000,000	_	_	4,000,000	0.61
April 20, 2024	<u> </u>	6,800,000		6,800,000	0.60
	9,594,600	6,800,000		16,394,600	

2022 Transactions

6,800,000 common shares and 6,800,000 warrants of HPQ were purchased in cash for an amount of \$3,604,000 in April 2022.

11,447,500 HPQ common shares were disposed for cash amounts totalling \$3,922,244 resulting in a realized loss of \$225,527.

2021 Transactions

12,755,600 HPQ common shares were disposed for cash amounts totalling \$14,252,732 resulting in a realized gain of \$9,893,900. 16,250,000 shares purchase warrants were exercised in cash for a total amount of \$2,518,750. An amount of \$9,181,250 was transferred to the share value on the exercise of the warrants.

8,268,000 common shares of HPQ were purchased in cash for an amount of \$8,070,109.

PyroGenesis Canada Inc.

Notes to the Consolidated Financial Statements

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At inception, the fair value of the HPQ warrants purchased in 2022 was measured using the Black-Scholes option pricing model using the following assumptions:

Number of warrants	6,800,000
Date of issuance	April 20, 2022
Exercise price (\$)	0.60
Assumptions under the Black-Scholes model:	
Fair value of the shares (\$)	0.47
Risk-free interest rate (%)	2.47
Expected volatility (%)	107.60
Expected dividend yield	-
Contractual remaining life (number of months)	24

As at December 31, 2022 and 2021, the fair value of the HPQ warrants was measured using the Black-Scholes option pricing model using the following assumptions:

		2022				2021	
Number of warrants	1,200,000	4,394,600	4,000,000	6,800,000	1,200,000	4,394,600	4,000,000
Date of issuance	April 29, 2020	June 2, 2020	Sept. 3, 2020	April 20, 2022	April 29, 2020	June 2, 2020	Sept. 3, 2020
Exercise price (\$)	0.1	0.1	0.61	0.60	0.1	0.1	0.61
Assumptions under the Black-Scholes model:							
Fair value of the shares (\$)	0.25	0.25	0.25	0.25	0.46	0.46	0.46
Risk-free interest rate (%)	4.03	4.03	4.03	4.03	1.22	1.22	1.22
Expected volatility (%)	80.55	73.74	76.85	74.58	89.88	94.01	110.47
Expected dividend yield	-	-	-	-	_	_	_
Contractual remaining life (in months)	4	5	8	16	16	17	20

As at December 31, 2022, a gain from initial recognition of the warrants of \$280,926 (\$510,573 – 2021) has been deferred off balance sheet until realized.

13. Royalties receivable

	December 31 2022	December 31 2021
	\$	\$
Opening balance	1,258,654	1,060,000
Accretion interest	118,290	132,809
Royalties recognized during the year	450,000	450,000
Discounting	(169,158)	(134,155)
Amounts received during the year	(250,000)	(250,000)
Balance at end of the year	1,407,786	1,258,654
Current portion	455,556	311,111
Non-current portion	952,230	947,543
	1,407,786	1,258,654

The Company sold intellectual property to HPQ Silicon Inc. ("HPQ") in 2016 ("HPQ 2016 contract") and its wholly owned subsidiary, HPQ Nano Silicon Powders Inc. in 2020 ("HPQ Nano contract"), and HPQ Silica Polvere Inc. ("HPQ Polvere contract") in 2021. The terms of those sales contracts include, in addition to the purchase price amounts already received of \$1,000,000 in 2016 and \$2,400,000 in 2020 and \$3,300,000 in 2021, respectively, the following variable consideration in the form of royalty payments:

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

HPQ 2016 contract:

Royalties are 10% of net sales, with minimum payments of \$200,000 in 2021 and \$250,000 in 2022 and every year thereafter. Payment is due no later than 30 days after the year end of HPQ Silicon Inc. An amount of \$250,000 has been received under this agreement in 2022 (\$200,000 was received in 2021).

HPQ Nano contract:

Royalties are 10% of net sales, with minimum payments of \$50,000 in 2021, \$100,000 in 2022, \$150,000 in 2023, and \$200,000 in 2024 and every year thereafter. Payments are due no later than 10 days after the year end of HPQ Nano Silicon Powders Inc. An amount of \$Nil has been received under this agreement in 2022 (\$50,000 was received in 2021).

HPQ Polvere contract:

Royalties are 10% of net sales with minimum payments of \$50,000 in 2023, \$100,000 in 2024, \$150,000 in 2025 and \$200,000 in 2026 and every year thereafter. Royalty payments are limited to the total net sales for the period. Payments are due no later than 10 days after the year end of HPQ Silica Polvere Inc.

During the year ended December 31, 2022, the Company recognized an additional \$250,000 and \$200,000 for the HPQ 2016 contract and HPQ Nano contracts, respectively, of royalties receivable, which have been discounted using 12.5% discount rate.

During the year ended December 31, 2021, the Company recognized an additional \$250,000 and \$200,000 for the HPQ 2016 contract and HPQ Nano contracts, respectively, of royalties receivable, which have been discounted using 12.5% discount rate.

The Company only recognizes variable consideration, including minimum royalties, arising from these agreements in the period(s) when it is highly probable that a reversal will not occur when the uncertainty associated with the variable consideration is subsequently resolved. Minimum royalties are recognized for the period the Company evaluates the collectability of the minimum royalties is probable, which the Company has estimated over four years.

The HPQ Nano contract and the HPQ Polvere contract each provide the Company with the option to convert, at any time, the future royalties that would be owed to it into a 50% equity stake in HPQ Nano Silicon Powders Inc. and HPQ Silica Polvere Inc., respectively. Each option is considered an embedded derivative that is initially measured at fair value and subsequently remeasured at fair value at each reporting period. The Company determined that the embedded derivatives had a fair value of \$Nil at the inception of the contracts and \$Nil at each of the reporting dates.

14. Deposits

	December 31 2022	December 31 2021
Current portion:	<u> </u>	\$
Suppliers	392,309	1,236,211
Security deposit on leased premises	40,241	92,241
Total current	432,550	1,328,452
Non-current portion:		
Suppliers	7,250	1,952
Security deposit on leased premises	38,803	246,804
Total non-current	46,053	248,756
Total deposits	478,603	1,577,208

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

15. Property and equipment

		Machinery			Equipment	
	Computer	and		Leasehold	under	
	equipment	equipment	Automobiles	improvements	construction	Total
	\$	\$	\$	\$	\$	\$
Cost						
Balance at December 31, 2020	549,659	1,621,899	306,164	180,901	1,940,234	4,598,857
Acquired through business combination	13,585	28,967	_	_	_	42,552
Additions	245,984	384,092	30,495	752,204	84,143	1,496,918
Balance at December 31, 2021	809,228	2,034,958	336,659	933,105	2,024,377	6,138,327
Additions ⁽¹⁾	164,059	(89,085)	_	209,435	_	284,409
Assets under construction put in service	_	1,065,672	_	958,705	(2,024,377)	_
Balance at December 31, 2022	973,287	3,011,545	336,659	2,101,245	_	6,422,736
Accumulated depreciation						
Balance at December 31, 2020	509,112	1,441,642	21,748	96,785	_	2,069,287
Depreciation	88,410	182,739	59,959	24,995		356,103
Balance at December 31, 2021	597,522	1,624,381	81,707	121,780	_	2,425,390
Depreciation	146,550	297,021	57,543	102,780		603,894
Balance at December 31, 2022	744,072	1,921,402	139,250	224,560		3,029,284
					-	
Carrying amounts						
Balance at December 31, 2021	211,706	410,577	254,952	811,325	2,024,377	3,712,937
Balance at December 31, 2022	229,215	1,090,143	197,409	1,876,685		3,393,452

⁽¹⁾ The adjustment to additions to Machinery and Equipment of \$89,085, relates to the discounting of the non-interest-bearing loan from the Economic Development Agency of Canada, representing government assistance (see note 21).

Equipment under construction included the leasehold improvements of a clean room and the costs related to building the new Plasma Powder Production equipment which have been put in service during the year ended December 31, 2022.

16. Leases

The Company has entered into lease contracts mainly for buildings and computer equipment, which expire at various dates through the year 2036. Some leases have extension or purchase options for various terms. The lease contracts do not impose any financial covenants.

On January 1, 2022, a lease for rent of a property with a trust whose beneficiary is the controlling shareholder and CEO of the Company, was modified to extend the lease term until December 2026. The lessor also reimbursed an amount of \$1,070,264 representing the balance at the date of modification of the original prepayment amount of \$1,178,530 made in 2020. At the date of modification, the lease liability was remeasured using a discount rate of 4%. As a result, the lease liability was increased by an amount of \$1,070,264 and the right-of-use assets was decreased by an amount of \$108,267.

On September 1, 2022, a lease of a property was modified to extend the term, to postpone the exercise of the purchase option of the property, and to factor a deposit of \$275,000 required to exercise the purchase option. As a result, the lease liability was remeasured using a discount rate of 8.6% and the lease liability and the right-of-use assets were decreased by \$203,154.

PyroGenesis Canada Inc. Notes to the Consolidated Financial Statements For the years ended December 31, 2022 and 2021 (In Canadian dollars)

a) Right-of-use assets

	Land and building \$	Computer equipment \$	Total \$
Balance at January 1, 2021	3,688,315	12,685	3,701,000
Additions - business combination	477,608	_	477,608
Additions	2,157,796	_	2,157,796
Depreciation	(566,182)	(4,228)	(570,411)
Balance at December 31, 2021	5,757,537	8,457	5,765,993
Modification of lease agreements	(311,421)	_	(311,421)
Depreciation	(631,600)	(4,228)	(635,828)
Balance at December 31, 2022	4,814,516	4,229	4,818,744

b) The table below summarizes changes to the lease liabilities:

	\$
Balance at January 1, 2021	2,988,542
Addition - business acquisition	477,608
Additions - other	2,120,893
Payments	(263,078)
Balance at December 31, 2021	5,323,965
Modification of lease agreements	867,110
Payments	(657,381)
Balance at December 31, 2022	5,533,694
Current portion	2,934,236
Non-current portion	2,389,729
Balance at December 31, 2021	5,323,965
Current portion	2,672,212
Non-current portion	2,861,482
Balance at December 31, 2022	5,533,694

c) Amount recognized in the consolidated statements of comprehensive loss:

	2022	2021
	\$	\$
Depreciation of right-of-use assets	635,828	570,411
Interest on lease liabilities	378,611	307,691
Expense related to lease payments excluded in the measurement of lease		
liabilities	243,209	178,707

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

d) Maturity analysis - contractual undiscounted cash flows of lease liabilities as at December 31, 2022

	\$
2023	2,984,243
2024	592,719
2025	572,562
2026	474,484
2027	229,332
Thereafter	1,891,989
	6,745,329

17. Intangible assets

	Production backlog	Development Patents costs		Total
	\$	\$	\$	\$
Cost				
Balance at December 31, 2020	_	768,392	244,871	1,013,263
Acquired through business combination	2,120,000	_	-	2,120,000
Additions	_	214,497	_	214,497
Write-off	<u> </u>	(85,544)		(85,544)
Balance at December 31, 2021	2,120,000	897,345	244,871	3,262,216
Additions	<u> </u>	208,680		208,680
Balance at December 31, 2022	2,120,000	1,106,025	244,871	3,470,896
Accumulated amortization				
Balance at December 31, 2020	_	58,125	49,524	107,649
Amortization	353,333	10,528	16,508	380,369
Balance at December 31, 2021	353,333	68,653	66,032	488,018
Amortization	848,000	13,522	16,508	878,030
Balance at December 31, 2022	1,201,333	82,175	82,540	1,366,048
Carrying amounts				
Balance at December 31, 2021	1,766,667	828,692	178,839	2,774,198
Balance at December 31, 2022	918,667	1,023,850	162,331	2,104,848

The Company's development costs have been incurred to develop plasma-related technologies and the patents protect the design and specification of these technologies.

18. Goodwill

The Company tests goodwill for impairment annually, or more frequently when an indicator of impairment is identified. Goodwill is considered impaired if the recoverable amount is less than the carrying amount.

The recoverable amount of an operating segment is determined based on value-in-use calculations, covering a detailed five-year forecast, followed by an extrapolation of expected cash flows for the remaining useful lives using a declining growth rate determined by management. The present value of the expected cash flows of the operating segment is determined by applying a suitable discount rate reflecting current market assessments of the time value of money and risks specific to the segment.

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For the purpose of impairment testing, goodwill is allocated to the sole operating segment, Pyro Green-Gas, which is expected to benefit from the synergies of the business combination in which the goodwill arises and is compared to its recoverable value.

At December 31, 2022 and 2021, it was determined that the recoverable amounts exceed the carrying amount, and no impairment was required. The recoverable amount in the most recent impairment test performed was determined using a pre-tax discount rate of 12.5% and terminal growth rate of 2% (2021 - pre-tax discount rate of 8% and terminal growth rate of 2%).

19. Accounts payable and accrued liabilities

	December 31 2022	December 31 2021
	\$	\$
Accounts payable	6,065,996	5,457,259
Accrued liabilities	2,891,053	3,730,048
Sale commissions payable ¹	904,724	737,364
Accounts payable to the controlling shareholder and CEO	254,097	144,506
	10,115,870	10,069,177

¹ Sale commissions payable relate to the costs to obtain long-term contracts with clients.

20. Billings in excess of costs and profits on uncompleted contracts

The amount to date of costs incurred and recognized profits less recognized losses for construction projects in progress amounted to \$37,374,909 (2021 - \$21,834,137).

Payments to date received were \$47,045,902 on contracts in progress (2021 - \$31,234,368).

Changes in billings in excess of costs and profits on uncompleted contracts during the year are explained by \$2,416,229 (2021 - \$6,268,910) recognized at the beginning of the year being recognized as revenue, and an increase of \$2,686,991 (2021 - \$9,076,169) resulting from cash received excluding amounts recognized as revenue.

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

21. Term loans

	Economic Development Agency	Other Term	Other Term	Canada Emergency Business	
	of Canada Loan¹	Loans ²	Loans ³	Account Loan ⁴	Total
	\$	\$	\$	\$	\$
Balance, December 31, 2020	75,800	36,907	_	_	112,707
Assumed through business combination	_	_	36,520	50,000	86,520
Accretion	12,185	_	_	_	12,185
Payments	<u> </u>	(12,207)	(8,300)	_	(20,507)
Balance, December 31, 2021	87,985	24,700	28,220	50,000	190,905
Additions	292,941				292,941
Discounting	(89,085)	_	_	_	(89,085)
Accretion	28,229	_	_	_	28,229
Payments		(13,083)	(19,920)		(33,003)
Balance, December 31, 2022	320,070	11,617	8,300	50,000	389,987
Less current portion		(11,617)	(8,300)	(50,000)	(69,917)
Balance, December 31, 2022	320,070	<u> </u>	<u> </u>		320,070

¹ maturing in 2029, non-interest bearing, payable in equal instalments from April 2024 to March 2029.

Economic Development Agency of Canada Loan

On March 5, 2020, the Company entered into a repayable contribution agreement up to \$450,000 under the Regional Economic Growth through Innovation program from the Economic Development Agency of Canada ("EDC"). The contribution is repayable in 60 equal monthly instalments due and payable 24 months following the completion of the project. During the year ended December 31, 2022, the Company received contributions totalling \$292,941. The loan was discounted using the effective interest method using a rate of 8% as it is non-interest bearing. The difference between the discounted amount and the proceeds received of \$89,085 represents government assistance and is accounted for as a reduction of the property and equipment.

Canada Emergency Business Account ("CEBA") Loan

The Company's subsidiary participated in the CEBA program whereby it obtained an interest free and partially forgivable loan. The loan bears no interest and no minimum repayment terms, and one third of the loan amount is forgiven if repaid by December 31, 2023. The unpaid balance, if any, at December 31, 2023 would be converted to a 24-month term loan bearing interest at 5% and be reimbursed entirely by December 31, 2025.

22. Shareholders' equity

Common shares and warrants

Authorized:

The Company is authorized to issue an unlimited number of common shares without par value.

Issuance of units

On October 19, 2022, the Company completed a non-brokered private placement consisting of 1,014,600 units at a price of \$1.30 per unit for aggregate gross proceeds to the Company of \$1,318,980. Each unit is comprised of one common share of the Company and one common share purchase warrant of the company. Each warrant entitles the holder to purchase one additional common share at an exercise price of \$1.75 for a period of 24 months. The Company allocated an amount of \$1,095,780 to share capital representing the fair value of the shares on October 19, 2022, of \$1.08 per share and the residual amount of \$223,200 to warrants.

² maturing October 23, 2023 bearing interest at a rate of 6.95% per annum, payable in monthly instalments of \$1,200 secured by automobile (carrying amount of \$10,795 as at December 31, 2022)

³ maturing in May 2023, payable in monthly instalments of \$1,660, bearing interest at 7.45%

⁴ loan bearing no interest and no minimum repayment, if repaid by December 2023

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Shares issued upon exercise of stock options, share purchase warrants and compensation options

During the year ended December 31, 2022, 2,440,000 (3,482,000 - 2021) stock options and Nil (8,146,483 - 2021) share purchase warrants were exercised for net proceeds of \$1,412,799 and \$Nil (\$1,109,818 and \$12,396,107 - 2021) respectively. The amounts credited to share capital from the exercise of stock options include an ascribed value from contributed surplus of \$870,558 (\$364,000 - 2021). In addition, in 2021, 191,414 compensation options relating to a bought deal in 2020, were exercised for net proceeds of \$689,090.

Share redemptions for cancellation

In January 2021, the Company announced it had been authorized to repurchase for cancellation, on the open market, or subject to the approval of any securities authority by private agreements, 5,000,000 common shares from January 14, 2021, to January 13, 2022. In February 2022, the Company announced it had been authorized to repurchase 7,500,000 of its common shares from February 15, 2022, to February 14, 2023.

During the year 2022, the Company did not repurchase any common shares for purpose of cancellation. The Company was under no obligation to repurchase its common shares as at December 31, 2022.

During the year 2021, the Company repurchased and cancelled 840,094 Common shares at a weighted average price of \$4.96 per share, for a total cash consideration of \$4,183,617 including commissions of \$16,678. The excess of the total consideration over the carrying amount of the shares, in the amount of \$3,778,619 was applied against deficit.

The repurchases were made in the normal course of business at market prices through the TSX. The Company was under no obligation to repurchase its common shares as at December 31, 2021.

Stock options

The Company has a stock option plan authorizing the Board of Directors to grant options to directors, officers, employees and consultants to acquire common shares of the Company at a price computed by reference to the closing market price of the shares of the Company on the business day before the Company notifies the stock exchanges of the grant of the option. The number of shares which may be granted to any one person shall not exceed 5% (2% for consultants) of total share capital over a twelve-month period.

The following table sets out the activity in stock options:

	Number of options	Weighted average exercise price
Balance – December 31, 2020	9,040,000	1.57
Granted	2,970,000	4.55
Exercised (1)	(3,482,000)	0.32
Forfeited	(125,000)	4.41
Balance, December 31, 2021	8,403,000	3.10
Granted	2,475,000	3.55
Exercised (1)	(2,440,000)	0.58
Forfeited	(242,500)	4.07
Balance, December 31, 2022	8,195,500	3.96

⁽¹⁾ The weighted fair market value of the share price for options exercised in 2022 was \$1.44 (\$5.48 in 2021).

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

Grants in 2022

On January 3, 2022, the Company granted 150,000 stock options to the President and Chief Executive Officer of the Company, and 300,000 stock options to members of its Board of Directors. The stock options have an exercise price of \$3.36 per common share, vest immediately and are exercisable over a period of five (5) years.

On April 5, 2022, the Company granted 400,000 stock options to employees of the Company. The stock options have an exercise price of \$2.96 per common share. The 400,000 options will vest as follows: 10 percent as of the day of the grant, 20 percent at the first anniversary of the date of the grant, 30 percent on the second anniversary of the date of the grant and 40 percent on the third anniversary of the date of the grant. All options mentioned above are exercisable over a period of five (5) years.

On June 2, 2022, the Company granted 600,000 stock options to the President and Chief Executive Officer of the Company, and 900,000 stock options to members of its Board of Directors. The 1,500,000 options will vest as follows: 25 percent as of the day of the grant, 25 percent at the first anniversary of the date of the grant, 25 percent on the second anniversary of the date of the grant. The stock options have an exercise price of \$3.88 per common share and are exercisable over a period of five (5) years.

On July 3, 2022, the Company granted 125,000 stock options to employees of the Company. The stock options have an exercise price of \$2.14 per common share. The 125,000 options will vest as follows: 10 percent as of the day of the grant, 20 percent at the first anniversary of the date of the grant, 30 percent on the second anniversary of the date of the grant and 40 percent on the third anniversary of the date of the grant. All options mentioned above are exercisable over a period of five (5) years.

Subsequent to year end, the Company granted 150,000 stock options to the President and Chief Executive Officer of the Company, and 500,000 stock options to members of its Board of Directors. The stock options have an exercise price of \$1.03 per common share, vest immediately and are exercisable over a period of five (5) years. The Company accounted for an expense amounting to \$453,204 related to these options as the stock options granted related to the services in 2022 and there was a shared understanding of the terms and conditions related to such grant prior to the grant date.

The Company also granted 975,000 stock options to employees of the Company. The stock options have an exercise price of \$1.03 per common share. The 975,000 options will vest as follows: 10 percent as of the day of the grant, 20 percent at the first anniversary of the date of the grant, 30 percent on the second anniversary of the date of the grant and 40 percent on the third anniversary of the date of the grant. All options mentioned above are exercisable over a period of five (5) years. There was no expense accounted for in 2022 relating to these stock options.

Grants in 2021

On December 30, 2021, the Company granted 100,000 stock options to a member of its Board of Directors The stock options have an exercise price of \$3.61 per common share, vest immediately and are exercisable over a period of five (5) years.

On December 17, 2021, the Company granted 1,920,000 stock options to the President and Chief Executive Officer of the Company. The stock options have an exercise price of \$3.13 per common share, vest immediately and are exercisable over a period of five (5) years.

On October 14, 2021, the Company granted 100,000 stock options to the Chief Financial Officer of the Company. The stock options have an exercise price of \$5.04 per common share. The 100,000 options will vest as follows: 10 percent as of the day of the grant, 20 percent at the first anniversary of the date of the grant, 30 percent at the second anniversary of the date of the grant, and 40 percent at the third anniversary of the date of the grant and are exercisable over a period of five (5) years.

On June 14, 2021, the Company granted 100,000 stock options to an officer of the Company. The stock options have an exercise price of \$6.70 per common share. The 100,000 options will vest as follows: 25 percent at the date of the grant, 25 percent at the first anniversary of the date of grant, 25 percent at the second anniversary of the date of grant, and 25 percent at the third anniversary of the date of grant and are exercisable over a period of five (5) years.

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

On June 1, 2021, the Company granted 200,000 stock options to a member of its Board of Directors. The stock options have an exercise price of \$6.59 per common share. The 200,000 options will vest as follows: 25 percent at the date of the grant, 25 percent at the first anniversary of the date of grant, 25 percent at the second anniversary of the date of grant, and 25 percent at the third anniversary of the date of grant and are exercisable over a period of five (5) years.

On April 6, 2021, the Company granted 150,000 stock options to the President and Chief Executive Officer of the Company, 100,000 and 200,000 stock options to two members of the Board of Directors and 100,000 stock options to an employee of the Company. The stock options have an exercise price of \$8.47 per common share. Of these options, 250,000 will vest immediately, 200,000 options will vest as follows: 30 percent as of the day of the grant, 35 percent at the first anniversary of the date of the grant and 35 percent on the second anniversary of the date of the grant and the remaining 100,000 options will vest as follows: 10 percent as of the day of the grant, 20 percent at the first anniversary of the date of the grant, 30 percent at the second anniversary of the date of the grant, and 40 percent at the third anniversary of the date of the grant. All options mentioned above are exercisable over a period of five (5) years.

The weighted average fair value of stock options granted for the year ended December 31, 2022 was \$2.37 (\$2.99 in 2021) and \$2.02 per option for stock options granted subsequent to the year end. The weighted average fair value of each option granted was estimated at the grant date for purposes of determining share-based payment expense using the Black-Scholes option pricing model based on the following weighted-average assumptions:

Years ended December 31,	202	2	2021
Number of options granted or recognized	2,475,000	650,000	2,970,000
Exercise price (\$)	3.55	3.02	4.55
Fair value of each option under the Black-Scholes pricing model (\$)	2.37	2.02	2.99
Assumptions under the Black-Scholes model:			
Fair value of the shares (\$)	3.54	3.02	4.52
Risk-free interest rate (%)	2.43	3.38	1.11
Expected volatility (%)	83.17	83.15	83.00
Expected dividend yield	_	_	_
Expected life (number of months)	60	60	60

The underlying expected volatility was determined by reference to historical data of the Company's share price. No special features inherent to the stock options granted were incorporated into the measurement of fair value.

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

As at December 31, 2022, the outstanding options, as issued under the stock option plan to directors, officers, employees and consultants for the purchases of one common share per option, are as follows:

	Number of stock options				Number of stock options	Number of stock options	Exercise price	
	Dec 31, 2021	Granted	Exercised	Forfeitures	Dec 31, 2022	vested (1)	per option	Expiry date
							\$	
November 3, 2017	2,400,000	_	(2,400,000)	_	_	_	0.58	November 3, 2022
July 3, 2018	300,000	_	_	_	300,000	300,000	0.51	July 3, 2023
October 29, 2018	40,000	_	(40,000)	_	_	_	0.52	October 29, 2023
September 29, 2019	100,000	_	_	_	100,000	100,000	0.51	September 29, 2024
January 2, 2020	100,000	_	_	_	100,000	100,000	0.45	January 2, 2025
July 16, 2020	2,243,000	_	_	(42,500)	2,200,500	1,775,500	4.41	July 16, 2025
October 26, 2020	250,000	_	_	(200,000)	50,000	37,500	4.00	October 26, 2025
April 6, 2021	550,000	_	_	_	550,000	410,000	8.47	April 6, 2026
June 1, 2021	200,000	_	_	_	200,000	100,000	6.59	June 1, 2026
June 14, 2021	100,000	_	_	_	100,000	50,000	6.70	June 14, 2026
October 14, 2021	100,000	_	_	_	100,000	30,000	5.04	October 14, 2026
December 17, 2021	1,920,000	_	_	_	1,920,000	1,920,000	3.13	December 17, 2026
December 30, 2021	100,000	_	_	_	100,000	30,000	3.61	December 30, 2026
January 3, 2022	_	450,000	_	_	450,000	450,000	3.36	January 3, 2027
April 5, 2022	_	400,000	_	_	400,000	40,000	2.96	April 5, 2027
June 2, 2022	_	1,500,000	_	_	1,500,000	375,000	3.88	June 2, 2027
July 13, 2022		125,000		_	125,000	12,500	2.14	July 13, 2027
	8,403,000	2,475,000	(2,440,000)	(242,500)	8,195,500	5,730,500	3.96	

⁽¹⁾ At December 31, 2022, the weighted average exercise price for options outstanding which are exercisable was \$3.96.

As at December 31, 2021, the outstanding options, as issued under the stock option plan to directors, officers, employees and consultants for the purchases of one common share per option, are as follows:

	Number of stock options Dec 31, 2020	Granted	Exercised	Forfeitures	Number of stock options Dec 31, 2021	Number of stock options vested	Exercise price per option	Expiry date
November 3, 2017	2,420,000	_	(20,000)	_	2,400,000	2,400,000	0.58	November 3, 2022
July 3, 2018	300,000		(20,000)	_	300,000	300,000	0.51	July 3, 2023
October 29, 2018	70,000	_	(30,000)	_	40,000	40,000	0.52	October 29, 2023
September 29, 2019	200,000	_	(100,000)	_	100,000	100,000	0.51	September 29, 2024
January 2, 2020	100,000	_	_	_	100,000	100,000	0.45	January 2, 2025
July 16, 2020	2,450,000	_	(82,000)	(125,000)	2,243,000	1,775,500	4.41	July 16, 2025
October 26, 2020	250,000	_		`	250,000	125,000	4.00	October 26, 2025
April 6, 2021	_	550,000	_	_	550,000	320,000	8.47	April 6, 2026
June 1, 2021	_	200,000	_	_	200,000	50,000	6.59	June 1, 2026
June 14, 2021	_	100,000	_	_	100,000	25,000	6.70	June 14, 2026
October 14, 2021	_	100,000	_	_	100,000	10,000	5.04	October 14, 2026
December 17, 2021	_	1,920,000	_	_	1,920,000	1,920,000	3.13	December 17, 2026
December 30, 2021		100,000		_	100,000	100,000	3.61	December 30, 2026
	9,040,000	2,970,000	(3,482,000)	(125,000)	8,403,000	7,265,500	3.10	

For the year ended December 31, 2022, a share-based compensation expense of \$5,538,463 (2021 - \$9,762,745) was recorded in Selling, general and administrative expenses to the consolidated statements of comprehensive loss.

As at December 31, 2022, an amount of \$3,184,866 (2021 - \$2,719,354) remains to be amortized until October 2025 related to the grant of stock options.

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

Share purchase warrants

The following table reflects the activity in warrants during the year ended December 31, 2022, and the number of issued and outstanding share purchase warrants at December 31, 2022:

	Number of				Number of		
	warrants				warrants	Exercise	
	Dec 31,				Dec 31,	price per	
	2021	Issued	Exercised	Expired	2022	warrant	Expiry date
Issuance of units – October 19, 2022		1,014,600	_		1,014,600	1.75	Oct 19, 2024
_		1,014,600			1,014,600	1.75	

The following table reflects the activity in warrants during the year ended December 31, 2021, and the number of issued and outstanding share purchase warrants at December 31, 2021:

	Number of warrants Dec 31, 2020	Issued	Exercised	Expired	Number of warrants Dec 31, 2021	Exercise price per warrant	Expiry date
Issuance of units – September 28, 2018	3,448,276	_	(3,448,276)		_	0.58	January 28, 2021
Issuance of units – October 19, 2018	100,000	_	(100,000)	_	_	0.58	February 13, 2021
Issuance of units - May 15, 2019	1,355,500	_	(1,355,500)	_	_	0.85	May 15, 2021
Issuance of units - May 28, 2019	750,000	_	(750,000)	_	_	0.85	May 24, 2021
Issuance of units – June 19, 2019	500,000	_	(500,000)	_	_	0.85	June 19, 2021
Issuance of units - October 25, 2019	225,000	_	(225,000)	_	_	0.75	October 25, 2021
Issuance of units – November 10, 2020	1,677,275	_	(1,672,000)	(5,275)	_	4.5	November 10, 2022
Issuance of warrants – November 10, 2020	 8,056,051	_ <u>_</u>	(95,707) (8,146,483)			4.5	November 10, 2022
	8,056,051		(8,146,483)	(5,275)			

23. Supplemental disclosure of cash flow information

	2022	2021
	\$	\$
Accounts receivable	(985,015)	(12,372,139)
Costs and profits in excess of billings on uncompleted contracts	3,871,413	(3,849,077)
Inventory	(988,821)	(839,352)
Investment tax credits receivable	(19,891)	1,015,862
Royalties receivable	(30,842)	(65,845)
Deposits	2,277,136	145,379
Contract assets	(562,809)	-
Prepaid expenses	(53,942)	39,111
Accounts payable and accrued liabilities	346,003	1,953,208
Billings in excess of costs and profits on uncompleted contracts	270,762	1,485,969
Income taxes	267,414	(99,072)
	4,391,408	(12,585,956)

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

24. Supplemental disclosure on comprehensive income statement

The amount of inventories recognized in cost of sales is \$844,304 for the year ended December 31, 2022 (\$326,279 in 2021).

The aggregate amortization and write-off of intangible assets expense for the year ended December 31, 2022 was \$878,030 (2021 - \$465,913) and was recorded in cost of sales and services.

Depreciation on property and equipment amounted to \$603,894 and ROU assets was \$635,828 for the year ended December 31, 2022, as compared to (2021 - \$356,103 and \$570,411 respectively) and is recorded in selling, general and administrative.

Employee benefits totaled \$18,115,284 in the year ended December 31, 2022 (2021 - \$21,855,957) and include share-based compensation of \$5,538,463 (2021 - \$9,762,745).

The Company has been awarded various government grants during the year, which were recognized when they became receivable. The grants, received in 2022, are unconditional and amounted to \$204,791 (2021 - \$226,420). An amount of \$Nil (2021 - \$149,575) was recorded as a reduction to the related expenses in research and development, an amount of \$204,791 (2021 - \$76,845) was recorded as a reduction to the related expenses in selling, general and administrative.

25. Net finance costs

	2022	2021	
	\$	\$	
Financial expenses			
Interest on term loans	3,198	87,775	
Interest on lease liabilities	378,611	307,691	
Interest accretion on balance due on business combination	173,350	110,204	
Interest accretion on long term loans	28,229	12,185	
Penalties and other interest expenses	85,644	19,324	
	669,032	537,179	
Financial income			
Interest accretion on royalty receivable	(118,290)	(132,809)	
Net finance costs	550,742	404,370	

26. Loss per share

The following table provides a reconciliation between the number of basic and fully diluted shares outstanding as at December 31, 2022 and 2021:

	2022	2021
	\$	\$
Weighted daily average of Common shares	170,953,374	166,645,546
Dilutive effect of stock options	_	_
Dilutive effect of warrants	_	_
Weighted average number of diluted shares	170,953,374	166,645,546
Number of anti-dilutive stock options and warrants excluded from fully diluted loss		
per share calculation	6,745,100	8,403,000

27. Related party transactions

During the years ended December 31, 2022 and 2021, the Company concluded the following transactions with related parties:

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

In 2022, rent and property taxes were charged by a trust whose beneficiary is the controlling shareholder and CEO of the Company in the amount of \$277,389 (2021 - \$274,934). On January 1, 2022, a lease for rent of a property with a trust whose beneficiary is the controlling shareholder and CEO of the Company, was modified to extend the lease term until December 2026. The lessor also reimbursed an amount of \$1,070,264 representing the balance at the date of modification of the original prepayment amount of \$1,178,530 made in 2020. At the date of modification, the lease liability was remeasured using a discount rate of 4%. As a result, the lease liability was increased by an amount of \$1,070,264 and the right-of-use assets was decreased by an amount of \$108,267.

These expenses are recorded in captions cost of sales and selling and general in the consolidated statements of comprehensive loss. As at December 31, 2022 the right-of-use asset and the lease liabilities amount to \$680,980 and \$799,090 respectively (2021 - \$1,107,131 and \$Nil).

A balance due to the controlling shareholder and CEO of the Company amounted to \$254,097 (2021 - \$144,506) is included in accounts payable and accrued liabilities.

The key management personnel of the Company, in accordance with IAS 24 Related Party Disclosures, are the members of the Board of Directors and certain officers. Total compensation to key management consisted of the following:

	2022	2021	
	\$	\$	
Salaries – key management	1,204,306	3,049,501	
Pension contributions	22,479	59,377	
Fees – Board of Directors	157,900	187,600	
Share-based compensation – officers	2,017,348	6,182,573	
Share-based compensation – Board of Directors	2,293,167	2,338,650	
Other benefits – key management	244,621	237,903	
Total compensation	5,939,821	12,055,604	

28. Financial instruments

As part of its operations, the Company carries a number of financial instruments. It is management's opinion that the Company is not exposed to significant interest, currency or credit risks arising from these financial instruments except as otherwise disclosed. The Company's overall risk management program focuses on the unpredictability of the financial market and seeks to minimize potential adverse effects on the Company's financial performance. The Company does not use derivative financial instruments to hedge these risks.

Foreign currency risk

The Company enters into transactions denominated in US dollars for which the related revenues, expenses, accounts receivable and accounts payable and accrued liabilities balances are subject to exchange rate fluctuations.

As at December 31, the Company's exposure to foreign exchange risk for amounts denominated in US dollars is as follows:

	2022	2021
	\$	\$
Cash	2,871,062	1,714,670
Accounts receivable	13,537,912	14,465,011
Accounts payable and accrued liabilities	(1,713,717)	(1,023,999)
Total	14,695,257	15,155,682

Foreign currency risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates.

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

Sensitivity analysis

At December 31, 2022, if the US Dollar changes by 10% against the Canadian dollar with all other variables held constant, the impact on pre-tax gain or loss and equity for the year ended December 31, 2022 would have been \$1,470,000 (December 31, 2021 - \$1,516,000).

Credit concentration

During the year ended December 31, 2022, two customers accounted for 52% (December 31, 2021 – four customers for 79%) of revenues from operations.

	Revenues	2022 % of total revenues	Revenues	2021 % of total revenues
	\$	%	\$	%
Customer 1	5,598,653	29	7,308,191	24
Customer 2	4,314,225	23	7,019,953	23
Customer 3	_	_	6,417,373	21
Customer 4			3,551,900	11
Total	9,912,878	52	24,297,417	79

Three customers accounted for 56%, 16% and 11%, respectively (December 31, 2021 – one customer for 73%) of trade accounts receivable with amounts owing to the Company of \$18,894,727 (2021 - \$12,063,636), representing the Company's major credit risk exposure. Credit concentration is determined based on customers representing 10% or more of total revenues and/or total accounts receivable.

Credit risk

Credit risk is the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation. The maximum credit risk to which the Company is exposed as at December 31, 2022 represents the carrying amount of cash and cash equivalents, accounts receivable (except sales tax receivable), costs and profits in excess of billings on uncompleted contracts, deposits and royalties receivable.

Cash and cash equivalents, which only comprise guaranteed investment certificates redeemable on relatively short notice by the Company, are held with major reputable financial institutions.

Management has established a credit policy under which each new customer is analysed individually for creditworthiness before the Company's payment and delivery terms and conditions are offered. The Company's review could include reviewing external ratings, if they are available, financial statements, credit agency information, industry information and in some cases bank references. The Company's exposure to credit risk is mainly influenced by the individual characteristics of each customer. In monitoring customer credit risk, customers are identified according to their characteristics such as their geographic location, industry, trading history with the Company and existence of previous financial difficulties.

The Company does not generally require collateral or other security from customers on accounts receivable, however, the contract terms may include the possibility of recourse in the event of late payment. The Company believes that there is no unusual exposure associated with the collection of these receivables.

The credit risk associated with costs and profits in excess of billings on uncompleted contracts is similar to that of accounts receivable, as these amounts are accumulated and converted to accounts receivable as invoicing milestones are reached.

The royalties receivable are due from a company in which the Company has a strategic investments. The Company does not have collateral or other security associated with the collection of this receivable. The carrying amount of the royalties receivable have been discounted to reflect the time value of money and credit risk of the counterparty.

The deposits are payments made to suppliers and entities from which the Company leases property. The Company does not have collateral or other security associated with the collection of these deposits. As at December 31, 2022 and 2021,

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

no loss allowance has been recognized in connection with these deposits and the maximum exposure is the carrying amount of these deposits.

During the years 2022 and 2021, provisions for expected credit losses were recorded, however, no amounts of financial assets have been written off. The accounts provisioned by the loss are still subject to enforcement activity in order to collect the balances due.

Interest rate risk

Interest rate risk is the risk that the value of a financial instrument might be adversely affected by a change in interest rates. Changes in market interest rates may have an effect on the cash flows associated with some financial assets and liabilities, known as cash flow risk, and on the fair value of other financial assets or liabilities, known as price risk, and on the fair value of investments or liabilities, known as price risks. The Company is exposed to a risk of fair value on term loans as those financial instruments bear interest at fixed rates and to cash flow risk from the variable interest rate of the bank indebtedness.

Price risk

Price risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market price (other than those arising from foreign currency risk and interest risk), whether those changes are caused by factors specific to the individual financial instrument or its issuers or factors affecting all similar financial instruments traded in the market. The most significant exposure to the price risk for the Company arises from its investments in shares and warrants of public companies quoted on the TSX Venture Exchange. If equity prices had increased or decreased by 25% as at December 31, 2022, with all other variables held constant, the Company's investments would have increased or decreased respectively, by approximately \$1,841,484 (December 31, 2021 - \$4,042,000).

Liquidity risk

Liquidity risk is the risk that the Company will encounter difficulty in meeting obligations associated with financial liabilities that are settled by delivery of cash or another financial asset. The Company manages its liquidity risk by forecasting cash flows from operations and anticipating any investing and financing activities.

The following table summarizes the contractual amounts payable and maturities of financial liabilities and other liabilities as at December 31, 2022:

	Carrying value	Total contractual amount	Less than one year		4-5 years	Over 5 years
Bank indebtedness	991,902	991,902	991,902	_	_	_
Accounts payable and accrued liabilities ¹ Term loans	9,620,591 389,987	9,620,591 520,444	9,620,591 59,917	— 190.587	 180.000	<u> </u>
Balance due on business combination	3,907,775	4,137,820	2,177,800	1,960,020		
Lease liabilities	5,533,694	6,745,329	2,984,243	1,165,281	703,816	1,891,989
	20,443,949	22,016,086	15,834,453	3,315,888	883,816	1,981,929

¹ Accounts payable and accrued liabilities exclude amounts which are not financial liabilities.

For the years ended December 31, 2022 and 2021 (In Canadian dollars)

The following table summarizes the contractual amounts payable and maturities of financial liabilities and other liabilities as at December 31, 2021:

		Total				
	Carrying value	contractual amount	Less than one year	2-3 years	4-5 years	Over 5 years
		\$	\$		\$	
Accounts payable and accrued liabilities ¹	9,586,423	9,586,423	9,586,423	_	_	_
Term loans	190,905	263,232	85,731	67,561	62,823	47,117
Balance due on business combination	3,952,203	4,355,600	2,395,580	1,960,020	_	_
Lease liabilities	5,323,965	6,614,192	3,220,750	710,493	561,628	2,121,321
	19,053,496	20,819,447	15,288,484	2,738,074	624,451	2,168,438

¹ Accounts payable and accrued liabilities exclude amounts which are not financial liabilities.

The Company's Canadian subsidiary benefits from a line of credit of \$500,000, and the Italian subsidiary benefits from a 400,000 Euros (\$576,000) line of credit. At December 31, 2022, \$498,200 was drawn on the Canadian facility and 341,473 Euros (\$493,702) was drawn on the Italian facility. The credit facilities both bear interest at variable rates which is the bank's prime rate plus 1%, therefore, 7.45% for the Canadian facility and 8% for the Italian facility. There are no imposed financial covenants on the credit facilities.

Fair value of financial instruments

The fair value represents the amount that would be received for the sale of an asset or paid for the transfer of a liability in an orderly transaction between market participants at the measurement date. The fair value estimates are calculated at a specific date taking into consideration assumptions regarding the amounts, the timing of estimated future cash flows and discount rates. Accordingly, due to its approximate and subjective nature, the fair value must not be interpreted as being realizable in an immediate settlement of the financial instruments.

There are three levels of fair value that reflect the significance of inputs used in determining fair values of financial instruments:

Level 1 — quoted prices (unadjusted) in active markets for identical assets or liabilities.

Level 2 — inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices).

Level 3 — inputs for the asset or liability that are not based on observable market data.

The fair values of cash and cash equivalents, trade accounts receivable, other receivables, deposits, bank indebtedness, accounts payable and accrued liabilities approximate their carrying amounts due to their short-term maturities.

Investments in BGF and HPQ shares are valued at quoted market prices and are classified as Level 1.

Royalties receivable are discounted according to their corresponding agreements and are classified as Level 2.

Investments in HPQ warrants are valued using the Black-Scholes pricing model and are classified as Level 3 (note 11).

The fair value of the term loans and the balance due on business combination as at December 31, 2022 is determined using the discounted future cash flows method and management's estimates for market interest rates for similar issuances. Accordingly, as a result, their fair market values correspond to their carrying amount. The term loans are classified as level 2 and the balance due on business combination as Level 3.

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29. Contingent liabilities

The Company is currently a party to various legal proceedings. If management believes that a loss arising from these proceedings is probable and can reasonably be estimated, that amount of the loss is recorded. As additional information becomes available, any potential liability related to these proceedings is assessed and the estimates are revised, if necessary. Based on currently available information, management believes that the ultimate outcome of these proceedings, individually and in aggregate, will not have a material adverse effect on the Company's financial position or overall trends in results of operations.

The Company had received a government grant in prior years of approximately \$800,000 to assist with the development of a new system of advanced waste treatment systems technology. The grant is potentially repayable at the rate of 3% of any consideration received as a result of the project, for which funding has been received, to a maximum of the actual grant received. This repayment provision will remain in effect until May 30, 2024. The Company abandoned the project in 2011 and accordingly, no amount is expected to be repaid.

30. Capital management

The Company's objectives in managing capital are:

- a) To ensure sufficient liquidity to support its current operations and execute its business plan; and
- b) To provide adequate return to the shareholders

The Company's primary objectives when managing capital is to ensure the Company continues as a going concern as well as to maintain optimal returns to shareholders and benefits for other stakeholders.

The Company currently funds these requirements from cash flows from operations and with financing arrangements with third parties and shareholders.

The Company is not subject to any externally imposed capital requirements. The Company monitors its working capital in order to meet its financial obligations. As at December 31, 2022, the Company's working capital was \$1,650,709 (2021 - \$14,006,785).

The management of capital includes shareholders' equity for a total amount of \$16,868,927 (2021 - \$40,768,754) and term loans of \$389,987 (2021 - \$190,905), as well as cash and cash equivalents amounting to \$3,445,649 (2021 - \$12,202,513).

There were no significant changes in the Company's approach during the current and preceding fiscal year, however, In order to maintain or adjust capital structure, the Company may issue new shares, sell portions of its strategic investment and periodically purchase its own shares on the open market.

31. Income taxes

a) Income tax expenses is comprised of the following:

	2022	2021
	\$	\$
Current tax		
Current year	118,378	(155,714)
Deferred tax		
Origination and reversal of temporary differences	(6,219,309)	(5,095,595)
Change in unrecognized deductible temporary differences	6,176,915	4,511,349
	(42,394)	(584,246)
Income tax expense (recovery)	75,984	(739,960)

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b) Reconciliation of effective tax rate

	2022	2021
	\$	\$
Loss before income taxes	(32,091,043)	(39,171,899)
Income tax rates	26.5%	26.5%
Income tax recovery at the combined basic Federal and Provincial tax rates	(8,504,126)	(10,380,553)
Permanent differences	2,165,385	5,079,805
Tax rate changes	(826)	8,334
Prior year adjustment	115,118	60,533
Change in unrecognized deductible temporary differences	6,176,915	4,511,349
Other	123,518	(19,428)
Income tax expense (recovery)	75,984	(739,960)

The applicable statutory tax rates are 26.5% in 2022 and 26.5% in 2021. The Company's applicable tax rate is the Canadian combined rates applicable in the jurisdiction in which the Company operates.

c) Deferred tax assets and liabilities

Recognized deferred tax assets and liabilities:

As at December 31, 2022 and 2021, recognized deferred tax assets and liabilities are attributable to the following:

	Assets		Liabilities		Net	
	2022	2022 2021		2021	2022	2021
	\$	\$	\$	\$	\$	\$
Non-capital losses						
carried forward	772,343	1,705,073	_	_	772,343	1,705,073
Strategic investments	_	_	_	(656,507)	_	(656,507)
Royalties receivable	_	_	(373,063)	(333,543)	(373,063)	(333,543)
Property and equipment	_	_	(155,833)	(147,127)	(155,833)	(147, 127)
Intangibles	_	_	(243,447)	(468,167)	(243,447)	(468,167)
Deferred income	_	_	_	(21,000)	_	(21,000)
Right-of-use assets net of liabilities	_	_		(121,123)		(121,123)
Tax assets (liabilities)	772,343	1,705,073	(772,343)	(1,747,467)	_	(42,394)
Set off of tax	(772,343)	(1,705,073)	772,343	1,705,073		<u> </u>
Net tax assets (liabilities)				(42,394)		(42,394)

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Deferred taxes from temporary differences and unused tax losses and tax credits are summarized as follows:

	January 1, 2021 \$	Recognized on business combination	Recognized in profit or loss \$	December 31, 2021 \$	January 1, 2022 \$	Recognized in profit or loss	December 31, 2022 \$
Non-capital losses carried forward	4,982,328	642,149	(3,919,404)	1,705,073	1,705,073	(932,730)	772,343
Strategic investments	(4,919,499)	_	4,262,992	(656,507)	(656,507)	656,507	_
Investment tax credits	(273,854)	_	273,854	_	_	_	_
Royalties receivable	(280,900)	_	(52,643)	(333,543)	(333,543)	(39,520)	(373,063)
Property and equipment	(25,273)	(2,840)	(119,014)	(147,127)	(147,127)	(8,706)	(155,833)
Intangibles	_	(559,949)	91,782	(468,167)	(468,167)	224,720	(243,447)
Deferred income	_	_	(21,000)	(21,000)	(21,000)	21,000	_
Right-of-use assets net of liabilities	(188,802)		67,679	(121,123)	(121,123)	121,123	_
IIADIIIIIGS	(706,000)	79,360	584,246	(42,394)	(42,394)	42,394	

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As at December 31, 2022 and 2021, the amounts and expiry dates of tax attributes and temporary differences for which no deferred tax assets were recognized are as follows:

		Decemb	December 31, 2022		December 31, 2021		
		Federal	Provincial		Federal	Provincial	
		\$	\$		\$	\$	
Research and devel	opment expenses,						
without time limitatio	n:	11,917,963	12,1	50,617	11,399,104	11,023,013	
Federal research an	d development						
investment tax credi							
2029		299,881		<u>—</u>	299,881		
2030		89,879		_	89,879	_	
2031		223,759		_	223,759	<u> </u>	
2032		186,031		_	186,031	<u> </u>	
2033		105,216		_	105,216	_	
2034		212,609		_	212,609		
2035		488,555		_	488,555	_	
2036		359,594		_	359,594	_	
2037		253,885			253,885	_	
2038		186,015		_	186,015	_	
2039		340,728		_	465,535	_	
2040		101,562		_	101,562	_	
2041		167,461		_	359,115	_	
2042		256,417		_	_		
		3,271,592			3,331,636		
		cember 31, 2022			ecember 31, 202		
	<u>Federal</u>	Provincial	Italy	Federal	<u>Provincial</u>	ltaly	
		<u> </u>	\$	\$	\$	\$	
Tax losses carried forward:							
iorward.							
2032	2,866,759	2,866,759	_	628,948	_	_	
2033	2,047,643	2,047,643	_	2,047,643	1,490,639		
2034	589,007	589,007	_	589,007	589,007	_	
2035	703,664	416,827	_	703,664	416,827	_	
2036	3,579,827	3,440,527	_	3,579,827	3,440,527	_	
2037	1,577,876	1,568,739	_	1,577,876	1,568,739		
2038	5,716,536	5,650,620	_	5,716,536	5,650,620	_	
2039	4,772,060	4,079,919	_	4,163,315	4,079,919	_	
2040	533,485	533,485	_	· —	_	_	
2041	3,818,898	3,773,941	_	2,710,255	2,659,255		
2042	16,135,868	16,140,505	_	· —	_	_	
2072							
Indefinite		<u> </u>	908,073	<u> </u>		815,620	

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	December	31, 2022	December	· 31, 2021	
	Federal	Provincial	Federal	Provincial	
	\$	\$	\$	\$	
Other deductible temporary differences,		_			
Without time limitation:					
Right-of-use assets net of liabilities	687,896	687,896	_	_	
Strategic investments	3,068,378	3,068,378	<u>—</u>	_	
Financing costs	677,789	677,789	1,100,504	1,100,504	
Intangible assets	3,460,822	3,194,890	3,712,181	3,431,133	
Capital losses	_	_	464,768	464,768	
	7,894,885	7,628,953	5,277,453	4,996,405	

Deferred tax assets and investment tax credits have not been recognized in respect to these items because it is uncertain that future taxable profit will be available against which the Company can utilise the benefits therefrom. The generation of future taxable profit depends on the successful commercialisation of the Company's products and technologies.

32. Segment information

The Company operates in one segment, based on financial information that is available and evaluated by the Company's Board of Directors. The Company's head office is located in Montreal, Quebec. The operations of the Company are located in three geographic areas: Canada, Italy and India.

The following is a summary of the Company's total revenues by geography:

	2022	2021
	\$	\$
Brazil	162,797	1,475,608
Canada	11,933,904	7,383,884
England	_	634
Germany	11,606	3,867
India	91,699	698,837
Israel	27,360	126,246
Italy	1,309,478	2,514,665
Mexico	371,668	920,818
Netherlands	112,634	_
Poland	47,591	60,406
Saudi Arabia	1,511,142	7,019,953
South Africa	29,997	<u> </u>
Spain	22,049	1,178
United States of America	2,661,071	10,567,741
Vietnam	720,507	294,513
	19,013,503	31,068,350

Revenue by product line and revenues recognized by revenue recognition method are presented in note 7.

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The following is a summary of selected asset categories by geographic market, at December 31:

	2022			2021			
	\$	\$	\$	\$	\$	\$	
	Canada	India	Total	Canada	India	Total	
Property and equipment	3,372,356	21,096	3,393,452	3,685,974	26,963	3,712,937	
Right-of-use assets	4,818,744	_	4,818,744	5,765,993	_	5,765,993	
Intangible assets	2,104,848	_	2,104,848	2,774,198	_	2,774,198	
Goodwill	2,660,607	<u> </u>	2,660,607	2,660,607		2,660,607	
	12,956,555	21,096	12,977,651	14,886,772	26,963	14,913,735	

In 2022 and 2021, none of the selected asset categories above were located in Italy.

33. Subsequent event

On March 8, 2023, the Company announced it had completed a non-brokered private placement consisting of the issuance and sale of 5,000,000 units of the Company at a price of \$1.00 per unit, for gross proceeds of \$5,000,000. Each unit consists of one common share of the Company and one common share purchase warrant. Each warrant entitles the holder thereof to purchase one common share at a price of \$1.25 until March 7, 2025. The entire amount is allocated to the common shares as the fair value of the common shares on March 8, 2023 was \$1.38.